CATALOG 1970-1972

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

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1 ARMORY SQUARE ◆ SPRINGFIELD, MASSACHUSETTS

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TABLE OF CONTENTS

TABLE OF CONTENTS

– HISTORY –

No other community college in Massachusetts, perhaps none in the nation, is as fortunate in its location as is Springfield Technical Community College. This area, two hundred feet above sea level, the highest in downtown Springfield, was inspected by General Washington in October, 1789. Congress established the United States Armory here in April, 1794.

The beautiful fifty-four-acre campus has an inner quadrangle completely surrounded by mellow red brick buildings with many muntined white-framed windows. Now quiet and serene with soft green turf, it was once noisy and dusty from the tramping feet of the garrison. Here Eli Whitney, the originator of interchangeable parts, did much of his early work; Thomas Blanchard invented the first lathe capable of turning irregular forms; and Captain A.B. Dyer established the highest standards then known for quality and precision.

This hallowed historic place must necessarily inspire our students to strive for high competence in technology and sincere dedicated citizenship.

Established in 1964 by the City of Springfield as the Springfield Technical Institute, the school became the Springfield Technical Community College by act of the Great and General Court (state legislature) in 1967. Initial enrollment of 400 students with a faculty of 20 has grown to 2600 served by a teaching staff of 140.

A program designed to prepare engineering and science students for advance standing in four year institutions began in September of 1968. A similar program for liberal arts candidates began in September of 1969.

— PHILOSOPHY —

One of the primary responsibilities of a democracy is to provide for the education of the individual citizen to his maximum ability. Because the local community is the center of American life, the community must always have a direct concern for the self-realization of each of its citizens. The accomplishment of this objective is a major concern of the community college. Therefore, to maximize their chances of success, Springfield Technical Community College maintains an open door to all citizens of the community which it serves who indicate any likelihood of academic success at the college level.

To further this overall opportunity for self-advancement, the College functions as a cultural center for the community and thus provides a source of enrichment for its citizens and a stimulus for raising their levels of aspiration and accomplishment.

— OBJECTIVES —

The objectives of the College are:

1. To provide high-quality, low-cost education for qualified high school graduates who wish to complete two years of college on a commuting basis

2. To provide students with the opportunity for the development of social maturity through a well-balanced program of student activities

3. To provide students with comprehensive services in academic and personal counseling, occupational guidance, and job placement

4. To provide opportunities for continuing education for adults residing in the area served by Springfield Technical Community College.

The prime objectives of the College are, therefore, to educate its students to a high degree of competency in the technology of their choice and to support that competency with a solid working knowledge of mathematics, fundamentals of science, written and oral English, social sciences, and exposure in depth to the principals and the methodology of that particular technology.

— ACCREDITATION —

The College is a member of the American Association of Junior Colleges and of the New England Junior College Council. The President of the College has associate individual membership in the New England Association of Colleges and Secondary Schools, and the College has been given Recognition of Candidacy for Accreditation.

The College is approved by the Board of Collegiate Authority, Massachusetts Department of Education; by the Massachusetts Rehabilitation Commission; by the United States Office of Education for listing in the Directory of Higher Education; for the National Defense Student Loan Program; for federal assistance from any unit of the Department of Health, Education, and Welfare; by the United States Veterans Administration for the admission of veterans and war orphans; by the United States Department of Justice as a place of study for nonimmigrant students; and by the United States Internal Revenue Service as a nonprofit organization.

— CONTINUING EDUCATION —

The College offers courses in the evening and during the summer for all interested persons of post-high school age. There is no formal admission procedure. Since course offerings vary from semester to semester and enrollments in courses are unpredictable, the College reserves the right to cancel courses for insufficient enrollment. Furthermore, advance registration (in person or by mail) is encouraged for the student who wishes to reserve a place in a class that may be overenrolled.

Courses may be taken with or without college credit. It is possible for students to complete a degree program through the Evening and Summer Division, but in such cases the formal admission procedure for degree candidates applies. Guidance and counseling services are available for present and prospective Evening and Summer Division students.

The College will consider offering courses requested by responsible groups of fifteen or more persons. Interested groups should communicate with the Director of Continuing Studies.

The degree-granting program of the Evening Division offers curricula which lead to an Associate in Science or an Associate in Arts Degree.

The objective of the Evening program is to meet the needs of those:

1. Who are qualified to perform college work and who wish to attain a college degree through part-time study

2. Who are presently employed and desire to further their education in order to perform more efficiently on the job, or qualify for promotion.

Qualified students may become candidates for the Associate Degree in Data Processing, Electronics Technology, Electrical Technology, Graphic Arts, Machine Design, Tool Design, Production Technology, Secretarial Science, Fire Science, Law Enforcement, Liberal Arts, and Business Administration.

UNIVERSITY OF MASSACHUSETTS
(Proposed Extension Courses at STCC)

As this catalog is going to press, plans are being made with Springfield Technical Community College to offer a limited number of University of Massachusetts courses for credit at this college. These courses will meet at night and will be taught during the regular evening schedule. Further information is available from the acting director of the program at the University, Dr. William C. Venman, Division of Continuing Education.

— ADMISSIONS POLICY —

Candidates for admissions should address all communications to the Office of Admissions. Applications should be filed as far as possible in advance of the desired date for matriculation. Admission is granted when the Admissions Committee has satisfactory evidence that the applicant shows promise for successfully completing an appropriate program of college study.

Any student who has been graduated from high school or who has been awarded a state equivalency diploma and is seriously interested in continuing his education is encouraged to apply for admission. The required academic preparation for admission may vary from program to program.

Students applying for occupational programs will be selected on the basis of the high school record and the judgment of the Admissions Committee relative to their chances of success in the program they elect. All students are required to take the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board and to submit their scores to the Director of Admissions before admission. These scores will not affect the admissions decision; they will be used only for placement purposes.

Student Development Program

Students who meet the minimum criteria for admission but who are not qualified to matriculate in a specific course of study will be offered a Student Development Course which would prepare them for transfer to the desired course at the end of one academic year.

Individual interviews may be required and will be arranged if deemed necessary.

The College is a nonsectarian, fully integrated institution of higher learning in compliance with the Civil Rights Act of 1964 and welcomes all persons regardless of race, color, or national origin.

— ADMISSIONS REQUIREMENTS —

An applicant to the college must have graduated from high school (or have an equivalency diploma) with 16 units of credit distributed as follows:

1. Liberal Arts Applicants: English-4 units, mathematics-3 units, foreign language-2 units, history-1 unit, electives-6 units

2. Engineering Transfer Applicants: English-4 units, mathematics-4 units, science-2 units, history-1 unit, electives-5 units

3. Business Administration Applicants: English-4 units, mathematics-2 units, history-1 unit, electives-9 units

4. Technology Applicants: English-4 units, mathematics (algebra, geometry)-2 units, science-1 unit (physics or chemistry), history-1 unit, electives-8 units

5. Nursing Applicants: English-4 units, mathematics-2 units, science (chemistry preferred)-2 units, history-1 unit, electives-7 units, S.A.T. scores totalling 800 or above.

6. Health Occupations Applicants: All require English-4 units, history-1 unit, biology-1 unit in addition to the special requirements below:

    a. Dental Hygiene: Chemistry-1 unit, mathematics-2 units
    b. Inhalation Therapy: Chemistry-1 unit
    c. Medical Laboratory Assistant: Chemistry-1 unit, mathematics-2 units
    d. Physical Therapy Assistant: Chemistry-1 unit, mathematics-2 units
    e. Radiologic Technology: Chemistry and/or physics-1 unit, mathematics-2 units

    The balance of credits may be from elective areas.

FRESHMAN APPLICATION PROCEDURES

1. Submit an application provided by the College with a non-refundable $10 application fee.

2. Have a transcript of all marks, including the first mark period of senior year, sent to the Admissions Office. Applicants with a high school equivalency certificate must submit a photocopy of the marks received on the individual tests of their equivalency examination. Veterans must also forward a copy of their D.D.—214 separation papers.

3. Arrange to take the Scholastic Aptitude Test of the College Entrance Examination Board. Applications for this examination may be obtained from any guidance office. The scores of this examination are used only for placement purposes.

APPLICANTS FROM OTHER COLLEGES

Students who apply from other colleges whether or not they ask for transfer credit must follow the same procedures as freshman applicants. In addition they must:

1. Submit a copy of their marks from the previous college indicating they are eligible to return to the other college

2. Fill out a form for the Dean of Students which will be forwarded to the Dean of Students at the previous college

3. Arrange for an interview at Springfield Technical Community College

Transfer credit will be granted for work done in courses that parallel courses taught at Springfield Technical Community College in the applicants' field of study. Transfer credit will be granted only for work done with a C grade or better. No more than 30 credits will be accepted toward a degree from Springfield Technical Community College.

TUITION AND FEES

The following fees are the approved charges authorized by the Massachusetts Board of Regional Community Colleges for the academic year:

Application Fee (nonrefundable)	$ 10.00
Tuition for Massachusetts Residents	200.00
Tuition for Out-of-State Students	500.00
Tuition, Part-time (per semester hour)	13.00
Student Activities Fee	
Full-time students	40.00
Part-time students	20.00
Late Registration Fee	5.00
Change of Course Fee	3.00
Make-up Examination Fee	5.00
Student Insurance (mandatory)	2.50
Student Insurance (optional)	
Plan A -- 12-month, accident only, an additional	12.50
Plan A and B -- 12-month, accident and sickness, an additional	22.50
Transcripts	
First	no charge
Each additional	1.00
Graduation Fee (payable at the beginning of the semester preceding graduation)	15.00

REFUNDS

Students who withdraw from the College early in the semester after receiving approval of the Dean of Students are eligible for a refund of tuition according to the following schedule. The percentage of refund is determined by the date the student receives official approval of withdrawal.

During the first week of classes	90%
During the second or third week of classes	70%
During the fourth week of classes	50%
Subsequent to the fourth week of classes	none

ONLY TUITION CHARGES ARE REFUNDABLE

BOOKS AND SUPPLIES

In addition to the fees set forth above, a student should expect to pay about $100 per academic year for books and supplies.

— STUDENT FINANCIAL ASSISTANCE —

FEDERALLY-FUNDED PROGRAMS

Financial aid at Springfield Technical Community College is awarded through National Defense Student Loans, Educational Opportunity Grants, and the College Work-Study Program to students who cannot meet the full cost of college because of limited family or personal resources.

Each of these government programs is unique; the type of award depends on the individual student's financial need. In certain cases, it is possible to combine two or three programs as a package, Applications should be made in the manner described below:

a. College Scholarship Service

STCC uses the College Scholarship Service of Princeton, New Jersey to assist its Financial Aid Office in the determination of a student's eligibility for financial help. Students wishing to participate in the EOG, NDSL, or Work-Study Programs should obtain a copy of the Parents' Confidential Statement prepared by the College Scholarship Service from their secondary school guidance office. Married students and other applicants who do not receive

financial support from their parents should submit a Student's Confidential Statement available at the Financial Aid Office, STCC. An unmarried student whose parents are deducting him on their income tax must file a Parents' Confidential Statement. The Parents' Confidential Statement or the Student's Confidential Statement should be mailed to Princeton when the STCC admissions application is submitted or **no later than April 15** of the admission year.

b. STCC Financial Aid Application

In addition to the Parents' Confidential Statement (see "a" above), each applicant for aid must complete an STCC Financial Aid Application. Requests for these forms should be sent to the Financial Aid Office, STCC, before April 15.

COMMONWEALTH OF MASSACHUSETTS SCHOLARSHIPS

The Massachusetts Board of Higher Education offers a generous scholarship program to full-time students who are residents of the state. Information regarding applications may be obtained by writing to the Commonwealth of Massachusetts, Board of Higher Education, Scholarship Office, 182 Tremont Street, Boston, Massachusetts 02111.

PRIVATE ASSISTANCE

Several scholarships awarded by private organizations in Greater Springfield are also available. Requests for information should be directed to the Financial Aid Officer, STCC.

VETERANS

Any veteran who was a resident of Massachusetts during the six months prior to enlistment is eligible for a tuition waiver at

Springfield Technical Community College. Information on how to obtain the waiver is sent to each veteran after receipt of the $40.00 Reservation Fee. Waivers may take up to six weeks or more to process. Those not having a waiver when tuition is due must pay and may then apply for refund.

Students eligible for assistance under the GI Bill, disabled veterans' legislation, and other VA programs should apply directly to the Veterans' Administration in Springfield or Boston.

GRADUATION REQUIREMENTS

The Board of Regional Community Colleges has statutory authority to confer associate degrees through the individual community colleges. Upon recommendation of the faculty, those candidates who qualify may be awarded the degree of Associate in Arts (A.A.) or the degree of Associate in Science (A.S.). Candidates for degrees shall have fulfilled the following requirements:

1. The student must have completed the courses required in the program in which he is enrolled. He must present at least 60 credit-hours, of which a minimum of 30 must be in residence and meet all departmental requirements. In all programs, except nursing, the student must have completed at least 20 credits in general studies.

2. The student must have earned a Q.P.A. of at least 2.0 (C-average).

3. The student must have satisfied all financial obligations to the College, including the payment of a graduation fee of $15 at the beginning of the semester preceding graduation or when 45 credits have been earned toward graduation.

4. A National Student Defense Loan recipient must have completed the exit interview with the Financial Aid Officer or his representative.

2. To provide students with the opportunity for the development of social maturity through a well-balanced program of student activities

3. To provide students with comprehensive services in academic and personal counseling, occupational guidance, and job placement

4. To provide opportunities for continuing education for adults residing in the area served by Springfield Technical Community College.

5. The student must participate in Commencement exercises in in order to receive a diploma.

Under certain circumstances, a student who has not met these requirements may be permitted to reenter the day, evening, or summer divisions of the College in order to remove deficiencies and to earn a degree by continued study.

Degrees earned by midyear will be conferred the following June; the diploma, however, will record the date the degree was earned.

STUDENT COLLEGE RELATIONS

It is taken for granted that when a student is admitted to the College, he has an earnest intellectual purpose and that he will comply with the school regulations of conduct and behavior. If, however, an offense occurs, whether it be in violation of the rules of good conduct or academic duty, the College authorities will take such action as seems to them merited in view of the circumstances of the particular case. Students who fail to take advantage of the opportunities provided for them by the Commonwealth may expect to have their privileges curtailed or withdrawn.

STUDENT ASSOCIATION

All students are members of the Student Association of Springfield Technical Community College. The student organization sponsors and makes possible a wide range of student activities. The Student Senate, representing the student body, approves the functions of organizations on the campus, administers the budget for student affairs, and works closely with the Dean of Students, faculty, and staff to provide a wholesome and beneficial exposure to extracurricular activities during the college year.

The Student Senate, in collaboration with a faculty committee appointed by the President, arranges cultural programs involving outstanding people in national and international affairs, the performing arts, the sciences, and the humanities. These events are all sponsored by the Student Association.

COUNSELING SERVICE

Counselors are available for consultation concerning school and personal problems. Program changes may only be made through the counseling office after the student's faculty advisor has consented to the change.

BOOKSTORE

The College Bookstore is located in Building 20. The store will be open daily during regular school hours; also, during the first two weeks of Evening School from 6:30 to 8:30 p.m., and thereafter on Monday evenings. A generous supply of emblems, jackets, textbooks, writing materials, and educational supplies may be purchased by students and faculty.

PARKING

A limited number of parking spaces are on the campus available to students. All cars parking on the campus must be registered with the campus police. There are additional parking areas available near the campus.

PUBLICATIONS

An official College Newsletter will be published periodically during the school year.

Contingent upon approval by the Student Senate, a student newspaper and College Yearbook are published by the Student Association. A Faculty Handbook and Student Handbook are also published yearly.

No student or group of students in connection with any publication, public performance, or social activity shall use any name or designation that implies a relationship with the College without the sanction of the President of the College or an officer designated by him.

HOUSING

Dormitory and physical education facilities are available at the new YMCA for a nominal charge.

The College does not maintain any dormitories, nor does it guarantee or control any housing. A list of available housing is maintained by the Admissions office and may be used by parents and students to assist them in finding appropriate accommodations.

LIBRARY

The Library, with its rapidly growing collection, is located in one wing of the Humanities Building and provides curriculum-related books, recreational reading, magazines, records, newspapers, and a basic reference collection. There is study space for 120 students at tables and individual carrels. The present collection contains 22,000 volumes..

Available funding will provide library expansion, including the audio-visual collection which will be increased to include tapes, films, microfilm, and microfiche. There are also plans for an automated information retrieval system which will greatly increase the value of the library resources to the faculty and students.

The Springfield City Library is located adjacent to the campus and students are eligible to use it. The facilities of the Springfield Academy of Medicine Library are also available to students of Springfield Technical Community College.

PART-TIME EMPLOYMENT

The College does not encourage students to work in their freshman year. Classroom attendance, homework, commuting, and personal affairs will occupy most of their time. Those who must work should allocate their time carefully in order not to jeopardize their academic standing. The College considers scholastic achievement and financial need in offering occasional part-time work in the administrative offices and with the custodial staff.

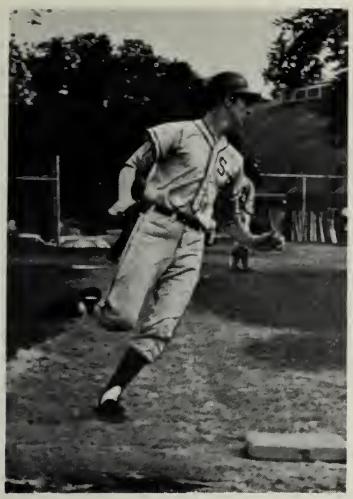
ATHLETICS

Springfield Technical Community College competes in a well-rounded athletic program of intercollegiate events. Although a relative newcomer to the collegiate sporting scene, its "youth" does not interfere with the growth of its sports program.

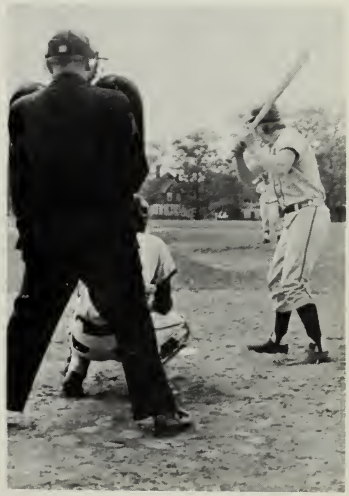
Varsity sports for men include soccer, basketball, hockey, golf, and baseball. Wrestling, skiing, and bowling have been started on a club basis.

Springfield Technical Community College has completed a soccer field and a hockey rink. The college is exceptionally proud of its Rifle Club. Here many students and faculty members may enjoy one of the finest ranges in the state.

On an intramural basis, the young men and women of Springfield Technical Community College enjoy softball, badminton, volleyball, and basketball. The student body actively participates in all phases of this program.



SPORTS



CLASS ATTENDANCE

Students are expected to attend all class sessions and examinations for which they are scheduled. Although independent study is encouraged, regular attendance at all classes is strictly required.

It is recognized that class attendance is essentially a matter between the student and his individual instructors. Each student is held responsible for knowing the specific attendance requirements as prescribed by his instructors and for the satisfactory make-up of all work missed by reason of absence. When a student is compelled for good reason to be absent from class, he should convey the reasons for the absence directly to the instructor concerned. A student whose work suffers because of absences will be warned by the instructor that further absence may result in grade reduction. If, in the judgment of the instructor, a student has acquired excessive absences, he will be reported to the office of the Dean of Students for counseling. In any case, should a student incur absence from class or laboratory for two successive weeks, such absences are reported directly to the office of the Dean of Students.

Courses may be dropped only by permission of the Dean of Students after approval by the student's academic advisor. Any disciplinary action taken because of absence from classes will be reported to all persons concerned. A grade of F, WF, or WP will be recorded on a student's permanent academic record if a student is dropped from a course due to poor attendance. Students may petition the Dean of Students in writing within five days for reinstatement.

Off-campus activities, appropriately supervised and sponsored by faculty members, which appear to justify a student's absence from scheduled classes, must be approved by the Dean of Students. Such activities must be justifiable on grounds consistent with the educational program of the College. Whether a student is excused from class or examination to participate in such activities is determined by the instructor concerned.

COURSE OR SECTION CHANGE

A student is expected to have his schedule in final form by the end of the registration period. If he wishes to replace one course or section with another, he must accomplish this in consultation with his faculty advisor the first week of classes. There is a fee of $3 for each such change.

WITHDRAWAL FROM THE COLLEGE

Students who withdraw from the College prior to the end of the fifth week will have grades of W posted on their permanent academic records. Students who withdraw from the College after the end of the fifth week of classes will have grades of W/F or W/P appropriately posted on their permanent academic records. The W/F's will count as 0.00 in the cumulative average; W/P's will not count in the cumulative average. All withdrawals must be processed through the Dean of Students.

AUDITING OF CLASSES

Students may attend certain classes as auditors (i.e., without receiving credit) under the following conditions:

1. Permission must be obtained from the Registrar during registration period.

2. All established charges for the course must be paid.

3. Priority in registration will be given to students who are registering in the course for credit.

4. Audit courses will be reflected on students' permanent record as Audit.

— GRADING SYSTEM —

At the end of each semester all students receive written letter grades according to the following standards:

Letter Grade	Quantitative Equivalent	Quality Points Earned Per Credit Hour
A	90 through 100	4
B	80 through 89	3
C	70 through 79	2
D	60 through 69	1
F	Below 60	0
I	Incomplete	0
W	Withdrawn	—
W/P	Withdrawn Passing	—
W/F	Withdrawn Failing	0

INCOMPLETE GRADES

The grade of Incomplete (I) indicates that a major requirement of the course has not been completed. Unless this deficiency has been made up within one month after the grade has been reported, the Incomplete Grade automatically becomes an F on the student's permanent record.

MID-SEMESTER PROGRESS REPORTS

Midway in each semester, those students who are at or near the point of failure in any course will receive a warning in writing. This admonition does not become a part of the student's permanent administrative record. However, its issuance requires that the student consult immediately with the professor concerned and with his faculty advisor for possible help and guidance.

QUALITY POINT INDEX

The quality point index required to be in good academic standing is as follows:

Beginning of the second semester of enrollment, a quality point index of 1.5

Beginning of the third semester of enrollment, a cumulative quality point index of 1.7

Beginning of the fourth semester of enrollment, a cumulative quality point index of 1.9

In order to graduate in the associate degree program, a student must satisfy the requirements of his department and must have earned a cumulative quality point average of 2.0. A student not meeting the above standards will be placed on academic probation and may be asked to withdraw if there is no academic improvement.

The accumulation of credits alone does not necessarily mean that a student is entitled to a degree. Normally a student must earn a minimum of 60 credits, but some departments may require more.

Students on academic probation are permitted to attend all College social functions but will not be permitted to participate in extracurricular activities.

HONORS

Dean's List: A student who has carried at least 12 credit hours a semester in an associate degree program and has earned a Q.P.I. of 3.00 is a Dean's List Student provided that he has received no grade less than C in that semester.

Graduation Honors: Candidates for graduation whose cumulative Q.P.I. is at least 3.8 will be graduated with the highest honors. Candidates with a cumulative Q.P.I. of 3.5 will be graduated with high honors. Candidates with a cumulative Q.P.I. of 3.3 will be graduated with honors.

MAKE-UP EXAMINATIONS

A student failing to take a semester examination may apply in writing to the Dean of Students for permission to take a make-up examination. If, in his opinion, absence from the regularly scheduled examination was unavoidable, the student may take a make-up examination upon payment of a $5 fee.

CHANGE OF PROGRAM

As his college work progresses, a student may find that a change of program is desirable. This may result from a change in career plans or from a feeling of inadequate preparation for the program in which he is enrolled. For example, a student registered for a Transfer Program may feel that he should change to one of the Career Programs. After consulting with his advisor, he should address a petition to the Dean of Students explaining his reasons for the desired change.

WITHDRAWALS FROM COURSES

Students who withdraw from a course prior to the end of the fifth week will have grades of W posted on their permanent academic records.

Students who withdraw from a course after the end of the fifth week and before the end of the seventh week of classes will have grades of WF or WP appropriately posted on their permanent academic records.

W/F's will count as 0.00 in the cumulative average; W/P's will not count in the cumulative average.

Students who withdraw from courses after the seventh week will have grades of E posted on their permanent academic records, which will be figured in the cumulative average.

All withdrawals must be processed through the Dean of Students.

TRANSFER POLICY

The procedure followed by students wishing to transfer to a baccalaureate program from Springfield Technical Community College is carefully structured so that all the potential transferees will follow the same plan. It is our policy to make recommendations on a personalized, individual basis. The Dean of Students coordinates the multiple details involved in any transfer. Recommendations and assistance in processing these applications are obtained from Division Chairmen for students enrolled in their respective programs. Other departmental chairmen are consulted when necessary.

Students recommended by the College for transfer must have demonstrated that they can do college level work. No student is recommended unless it is reasonably sure that he can be successful. No specific quality point average is required, but an average of 2.5 or better is generally required for success in most senior institutions.

Commencement Excercises '68

CURRICULA OF THE COLLEGE

UNIVERSITY PARALLEL PROGRAMS: Associate Degree

Business Administration
Engineering Science
Liberal Arts and Sciences

CAREER PROGRAMS

BUSINESS: ASSOCIATE DEGREE

Business Management
Executive Secretarial
Legal Secretarial
Medical Secretarial

ENGINEERING TECHNOLOGY: ASSOCIATE DEGREE

Automotive Technology
Bio-Medical Instrumentation Technology
Construction Technology
Data Processing Technology
Electrical Technology
Electronics Technology
Engineering Transfer
Environmental Technology
Graphic Arts Technology
Heating and Power Engineering Technology
Landscape Technology
Machine and Tool Design Technology
Mechanical Technology
Nuclear Technology**

ALLIED HEALTH SCIENCES: ASSOCIATE DEGREE

Dental Hygienist*
Early Childhood Technology
Inhalation Therapy Technician
Medical Assistant
Medical Laboratory Technician (MLT)
Mental Health Technician
Nursing
Physical Therapy Assistant
Radiologic Technology

CERTIFICATE PROGRAMS

Dental Assistant
Medical Assistant
Medical Laboratory Assistant (CLA)
Operating Room Technician
Cosmetology

*1971
**1973

COURSES OF STUDY

The MISSION of the COMMUNITY COLLEGE includes the provision of educational programs for students desiring transfer to the upper division of a baccalaureate degree program. No less important are programs designed to prepare students for a variety of career positions in which an associate degree is necessary or desirable -- the technician, the semi-professional.

Two types of curricula are offered at the Springfield Technical Community College: Transfer and Career.

UNIVERSITY PARALLEL

TRANSFER PROGRAMS

The transfer curricula are designed for students who plan to transfer with full credit to a senior college or university after completion of one or two years at the College. The courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. A high quality of academic achievement, revealing seriousness of purpose and sound habits of study, is the most important qualification for successful transfer.

Three transfer programs are offered at Springfield Technical Community College:

1. Business Administration
2. Engineering Science
3. Liberal Arts and Sciences

The BUSINESS ADMINISTRATION curriculum is designed to provide a balance of technical business administration courses to enable the student to enter his first job in the world of business with

proficiencies and abilities to perform adequately on the job; but, more important, to provide him with a background which will enable him to become promotable to levels of higher responsibility. The curriculum is designed so that the student upon completion of the program can transfer to the junior-year level of a school offering the baccalaureate degree in business administration.

The SCIENCE AND ENGINEERING curriculum is, in effect, the first two years of an engineering curriculum. Students who do satisfactory work should receive an Associate in Science Degree and should experience little difficulty in transferring to engineering colleges at the third-year level.

The LIBERAL ARTS and SCIENCE curriculum is an organized program of general education which includes course distributions in the humanities, the behavioral sciences, and the natural sciences. Students selecting this course will upon successful completion receive the Associate in Arts Degree (AA) and the Associate in Science Degree (AS) and may transfer to a baccalaureate degree program as juniors in schools of Liberal Arts and Education.

This curriculum, moreover, can perform an exploratory function for many students. It is regarded as an ideal course of study for those who have not yet decided on a specific career. The program enables them to complete certain studies while they are making their career decisions.

Liberal Arts and Sciences

Transfer Courses

– in –

- Business Administration
- Liberal Arts
- Science and Engineering

CURRICULUM FOR THE ASSOCIATE IN SCIENCE DEGREE IN BUSINESS ADMINISTRATION

FIRST YEAR

Core

1004 English Composition 1
6008 Introduction to Data Processing
2080 Introductory Mathematics
4086 General Psychology
5023 Accounting 1

1005 English Composition 2
6202 Data Processing Systems and Procedures
2016 Statistics
5050 Principles of Management
5024 Accounting 2

SECOND YEAR

Accounting Major

5040 Intermediate Accounting 1
5026 Cost Accounting
4014 Economics 1, Macro
5048 Business Law 1
Elective

5041 Intermediate Accounting 2
5044 Corporation Finances
4015 Economics 2, Micro
5049 Business Law 2
Elective

Finance Major

5046 Money & Banking
5047 Financial Statement Analysis
4014 Economics 1, Macro
5048 Business Law 1
Elective

5044 Corporation Finance
5045 Credits & Collections
4015 Economics 2, Micro
5049 Business Law 2
Elective

Management Major

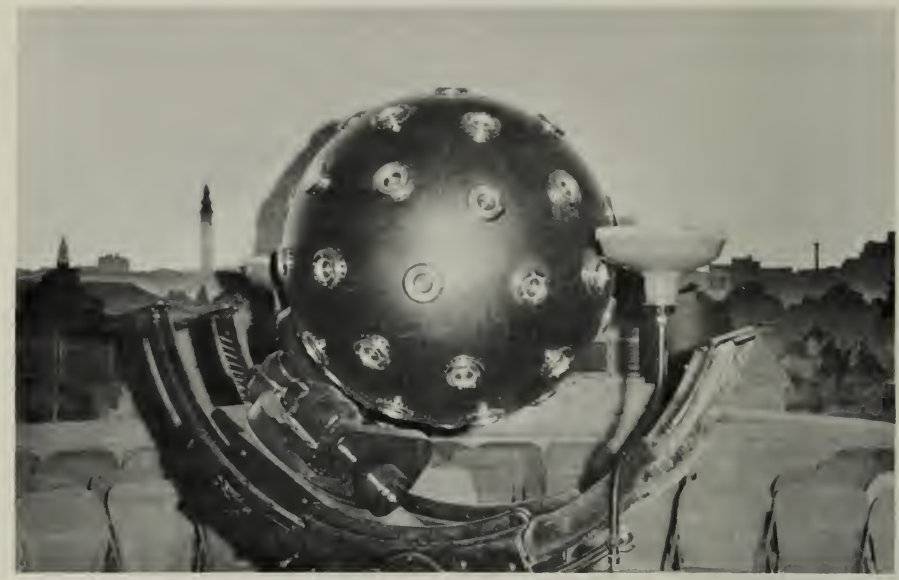
5051 Business Policies
5052 Personnel Management
4014 Economics 1, Macro
5048 Business Law 1
Elective

5053 Industrial Relations
5054 Production Management
4015 Economics 2, Micro
5049 Business Law 2
Elective

Marketing Major

5059 Marketing Procedures
5055 Logistics
4014 Economics 1, Macro
5048 Business Law 1
Elective

5056 Marketing Management
5057 Marketing Research
4015 Economics 2, Micro
5049 Business Law 2
Elective



SEYMOUR PLANETARIUM – MUSEUM OF SCIENCE

TAPESTRY COURT – FINE ARTS MUSEUM

Springfield Museums

AFFILIATED WITH SPRINGFIELD
TECHNICAL COMMUNITY COLLEGE

MUSEUM OF SCIENCE

MUSEUM OF FINE ARTS

GEORGE WALTER VINCENT SMITH
ART MUSEUM

CURRICULUM FOR THE ASSOCIATE OF ARTS DEGREE IN LIBERAL ARTS

Semester 1

No.	Course Title*	Credit
1004	English Composition 1	3
4012	Western Civilization 1	3
	Foreign Language (Elective)	3
2080	Finite Math 1	3
1007	Fundamentals of Speech	3
9080	Physical Education Men Freshmen	
9082	Physical Education Women Freshmen	
		15

Semester 2

No.	Course Title*	Credit
1005	English Composition 2	3
4013	Western Civilization 2	3
	Foreign Language (Elective)	3
4008	Introduction to Sociology	3
2081	Finite Math 2	3
9080	Physical Education Men Freshmen	1
9082	Physical Education Women Freshmen	1
		16-16

Semester 3

No.	Course Title*	Credit
1009	World Literature 1	3
	Laboratory Science	4
	Foreign Language (Intermediate) Elective	3
4086	General Psychology	3
	Humanities Elective	3
9081	Physical Education Men Sophomore	
9083	Physical Education Women Sophomore	
		16

Semester 4

No.	Course Title*	Credit
1010	World Literature 2	3
	Laboratory Science	4
	Foreign Language (Intermediate) Elective	3
	Social Science Elective	3
	Elective	3
9081	Physical Education Men Sophomore	1
9083	Physical Education Women Sophomore	1
		17-17

*All courses required for graduation

CURRICULUM FOR THE ASSOCIATE OF ARTS DEGREE IN GENERAL STUDIES

Semester 1

No.	Course Title*	Credit
*1004	English Composition 1	3
*4012	Western Civilization 1	3
	Elective	3
*4008	Introduction to Sociology 1	3
*1007	Fundamentals of Speech	3
9080	Physical Education Men Freshmen	
9082	Physical Education Women Freshmen	
		15

Semester 2

No.	Course Title*	Credit
*1005	English Composition 2	3
*4013	Western Civilization 2	3
	Elective	3
	Elective	3
*4086	General Psychology	3
9080	Physical Education Men Freshmen	1
9082	Physical Education Women Freshmen	1
		16-16

Semester 3

No.	Course Title*	Credit
*1009	World Literature 1	3
	Elective	3
	Elective	3
	Elective	3
*	Laboratory Science	4
9081	Physical Education Men Sophomore	
9082	Physical Education Women Sophomore	
		16

Semester 4

No.	Course Title*	Credit
*1010	World Literature 2	3
*9080	Laboratory Science	4
	Elective	3
	Elective	3
	Elective	3
9081	Physical Education Men Sophomore	1
9082	Physical Education Women Sophomore	1
		17-17

*Courses required for graduation

SCIENCE AND ENGINEERING TRANSFER PROGRAM

The work covered in the Engineering Science curriculum is primarily designed to prepare graduates to continue their studies in the engineering field in four-year colleges and universities. However, there are also employment opportunities for qualified graduates.

The emphasis in this program is on mathematics and physics, so that graduates can transfer to four-year schools into the junior year in physics, engineering, and mathematics.

CURRICULUM FOR THE ASSOCIATE IN SCIENCE DEGREE IN SCIENCE AND ENGINEERING

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
4012	Western Civilization 1	3		6	9	3
*2011	Mathematics 21	5		10	15	5
*3005	General Chemistry 21	3	3	6	12	4
*6154	Engineering Seminar 21	3	3	6	12	4
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
4013	Western Civilization 2	3		6	9	3
*2012	Mathematics 22	4		8	12	4
*3015	Physics 21	4	3	8	15	5
*3006	General Chemistry 22	3	3	6	12	4
		14	6	28	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
	Humanities Elective	3		6	9	3
1009	World Literature 1	3		6	9	3
*2013	Mathematics 23	4		8	12	4
*3016	Physics 22	3	6	6	15	5
		13	6	26	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1010	World Literature 2	3		6	9	3
*2014	Mathematics 24	4		8	12	4
*3017	Physics 23	4	3	8	15	5
	Electives	3		6	9	3
		14	3	28	45	15

*Courses required for graduation

"To provide an education adapted to the years, the capacity, and the condition of everyone, and directed to their freedom and happiness."

Thomas Jefferson
Virginia Papers, 1781-85

CAREER PROGRAMS

Career curricula are designed for students who desire to complete a program of college education in two years and have decided to enter one of the many semiprofessional careers now available in engineering technology, medical health services, and business management for which two years of college education provide sufficient preparation. Career programs serve a two-fold purpose: They offer a general education to provide a student with a better understanding of the world in which he lives and specific preparation for a particular occupation. Students pursuing a career would probably be involved in a subsequent transfer to a senior college or university.

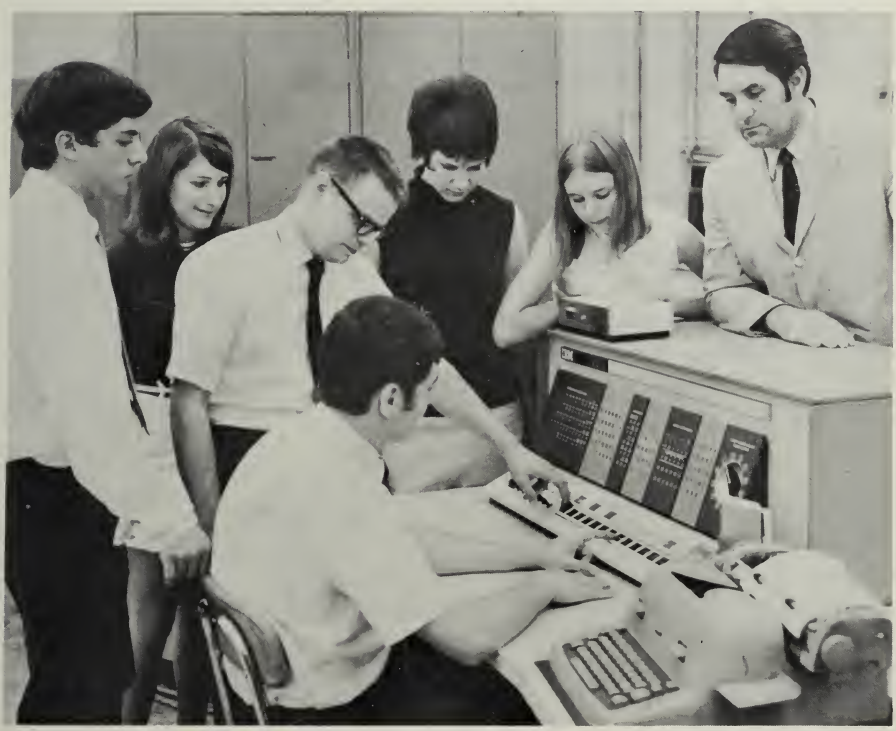
The college hopefully heeds the words of Alfred North Whitehead:

> *". . . culture is activity of thought, and receptiveness to beauty and human feelings. Scraps of information have nothing to do with it. A merely well-informed man is the most useless bore on God's earth. What we should aim at producing is men who possess both culture and expert knowledge in some special direction. Their expert knowledge will give them the ground to start from, and their culture will lead them as deep as philosophy and as high as art."*

Business Administration

- Business Management
  - Business Management/Accounting
    - Business Management/Finance
      - Business Management/Marketing
- Executive Secretarial
  - Legal Secretarial
    - Medical Secretarial

BUSINESS MANAGEMENT



The Business Management program combines an overall understanding of the dynamic business world with an opportunity to specialize in major fields of accounting, finance, marketing, and management. The course provides for specialized instruction, continuing education, and immediate community needs.

BUSINESS MANAGEMENT

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2080	Finite Mathematics 1	3		6	9	3
4086	General Psychology	3		6	9	3
5023	Accounting 1	4		8	12	4
6008	Introduction to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2016	Statistics	3		6	9	3
5024	Accounting 2	4		8	12	4
5050	Principles of Management	3		6	9	3
6202	DP Systems and Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
5048	Business Law 1	3		6	9	3
5051	Business Policies	3		6	9	3
5052	Personnel Management	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4015	Economics 2	3		6	9	3
5049	Business Law 2	3		6	9	3
5053	Industrial Relations	3		6	9	3
5054	Production Management	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

*All courses required for graduation

BUSINESS MANAGEMENT/ACCOUNTING

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2080	Finite Mathematics 1	3		6	9	3
4086	General Psychology	3		6	9	3
5023	Accounting 1	4		8	12	4
6008	Introduction to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2016	Statistics	3		6	9	3
5024	Accounting 2	4		8	12	4
5050	Principles of Management	3		6	9	3
6202	DP Systems and Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
5026	Cost Accounting	3		6	9	3
5040	Intermediate Accounting 1	3		6	9	3
5048	Business Law 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4015	Economics 2	3		6	9	3
5041	Intermediate Accounting 2	3		6	9	3
5044	Corporation Finance	3		6	9	3
5049	Business Law 2					
	Elective	3		6	9	3
		15		30	45	15

*All courses required for graduation

BUSINESS MANAGEMENT/FINANCE

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2080	Finite Mathematics 1	3		6	9	3
4086	General Psychology	3		6	9	3
5023	Accounting 1	4		8	12	4
6008	Introduction to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2016	Statistics	3		6	9	3
5024	Accounting 2	4		8	12	4
5050	Principles of Management	3		6	9	3
6202	DP Systems and Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
5046	Money and Banking	3		6	9	3
5047	Financial Statement Analysis	3		6	9	3
5048	Business Law 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4015	Economics 2	3		6	9	3
5044	Corporation Finance	3		6	9	3
5045	Credits and Collections	3		6	9	3
5049	Business Law 2	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

*All courses required for graduation

BUSINESS MANAGEMENT/MARKETING

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2080	Finite Mathematics 1	3		6	9	3
4086	General Psychology	3		6	9	3
5023	Accounting 1	4		8	12	4
6008	Introduction to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2016	Statistics	3		6	9	3
5024	Accounting 2	4		8	12	4
5050	Principles of Management	3		6	9	3
6202	DP Systems and Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
5048	Business Law 1	3		6	9	3
5055	Logistics	3		6	9	3
5059	Marketing Procedures	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4015	Economics 2	3		6	9	3
5049	Business Law 2	3		6	9	3
5056	Marketing Management	3		6	9	3
5057	Marketing Research	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

*All courses required for graduation

SECRETARIAL SCIENCE

The Secretarial Science curriculum is primarily an occupational program with legal, medical, and executive secretarial options. Successful completion results in the awarding of the Associate in Science Degree. These curricula options are designed to prepare students for positions entailing executive-level, secretarial responsibilities. Career opportunities exist in business and professional offices, educational institutions, hospitals, and other public and private agencies. Opportunities also exist for transfer to baccalaureate degree programs in secretarial science and in business education.

EXECUTIVE SECRETARY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4014	Economics 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
5008	Typewriting 1	2	3	4	9	3
5018	Shorthand 1 or Elective	3	2	6	11	3
		14	5	28	47	15

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
4086	General Psychology	3		6	9	3
5009	Typewriting 2	2	3	4	9	3
5019	Shorthand 2	3	2	6	11	3
		14	5	28	47	15

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
5031	Our Legal Environment 11	3		6	9	3
5020	Shorthand 3	3	2	6	11	3
5022	Secretarial Accounting 1	3		6	9	3
5010	Secretarial Typewriting 1	2	3	4	9	3
5016	Secretarial Practice 1	3		6	9	3
		14	5	28	47	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1006	Business English	3		6	9	3
5017	Secretarial Practice 2	3		6	9	3
5038	Secretarial Accounting 2	3		6	9	3
5021	Exec./Tech. Dictation and Transcription	5	5	10	20	6
		14	5	28	47	15

*All courses required for graduation

LEGAL SECRETARY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4014	Economics 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
5018	Shorthand 1 or Elective	3	2	6	11	3
5008	Typewriting 1	2	3	4	9	3
		14	5	28	47	15

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
4086	General Psychology	3		6	9	3
5009	Typewriting 2	2	3	4	9	3
5019	Shorthand 2	3	2	6	11	3
		14	5	28	47	15

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
5022	Secretarial Accounting 1	3		6	9	3
5031	Our Legal Environment 11	3		6	9	3
5010	Secretarial Typewriting 1	2	3	4	9	3
5020	Shorthand 3	3	2	6	11	3
5016	Secretarial Practice 1	3		6	9	3
		14	5	28	47	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1006	Business English	3		6	9	3
5017	Secretarial Practice 2	3		6	9	3
5038	Secretarial Accounting 2	3		6	9	3
5036	Legal Dictation and Transcription	5	5	10	20	6
		14	5	28	47	15

*All courses required for graduation

MEDICAL SECRETARY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4014	Economics 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
5008	Typewriting 1	2	3	4	9	3
5018	Shorthand 1 or Elective	3	2	6	11	3
		14	5	28	47	15

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
4086	General Psychology	3		6	9	3
5009	Typewriting 2	2	3	4	9	3
5019	Shorthand 2	3	2	6	11	3
		14	5	28	47	15

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
5022	Secretarial Accounting 1	3		6	9	3
5020	Shorthand 3	3	2	6	11	3
5010	Secretarial Typewriting 1	2	3	4	9	3
5016	Secretarial Practice 1	3		6	9	3
5031	Our Legal Environment 11	3		6	9	3
		14	5	28	47	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1006	Business English	3		6	9	3
5034	Medical Dictation and Transcription	5	5	10	20	6
5017	Secretarial Practice 2	3		6	9	3
5038	Secretarial Accounting 2	3		6	9	3
		14	5	28	47	15

*All courses required for graduation

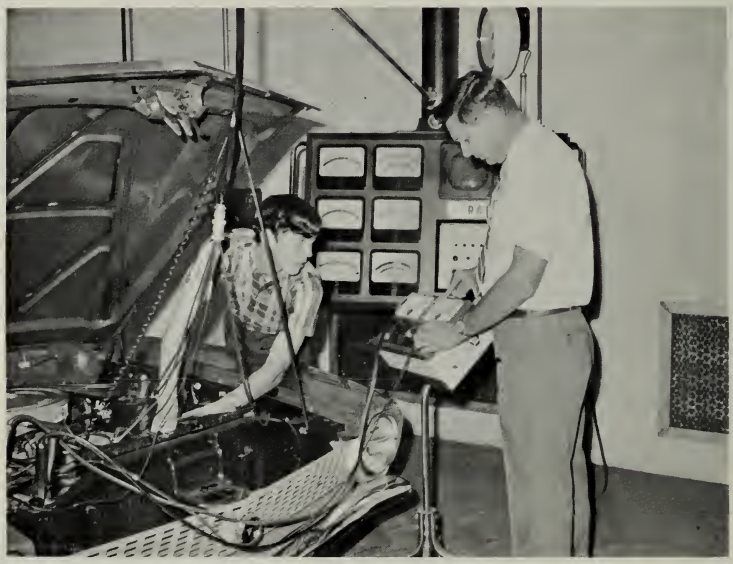
Commencement Excercises '69

Engineering Technology

- Automotive Technology
- Bio-Medical Instrumentation Technology
- Construction Technology
- Data Processing Technology
- Electrical Technology
- Electronics Technology
- Environmental and Process Technology
- Graphic Arts Technology
- Heating and Power Engineering Technology
- Landscape Technology
- Machine and Tool Design Technology
- Mechanical Technology (Production Option)
- Nuclear Technology

ENGINEERING TECHNOLOGY curricula are Technical programs which prepare students to work as members of engineering teams with competence at the technician level. The Associate in Science Degree (AS) is awarded for successful completion of these programs.

AUTOMOTIVE TECHNOLOGY



The two-year Automotive Technology curriculum consists of practical work experience in inspecting, testing, servicing, and repairing automobiles as well as a study of related technical subjects. A knowledge of basic scientific principles and technical information is emphasized so that students have an understanding of why mechanical and technical difficulties occur. Instruction in management and business operations is included in this course to prepare graduates for junior supervisory positions in the automotive field.

AUTOMOTIVE TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2005	Mathematics 11	4		8	12	4
4073	Human Relations at Work	3		6	9	3
6099	Gasoline Engines 1	2	2	4	8	3
6101	Drive Line 1	2	2	4	8	3
		14	4	28	46	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
3012	Physics 1	3	3	6	12	4
2006	Mathematics 12	4		8	12	4
6100	Gasoline Engines 2	2	2	4	8	3
6102	Drive Line 2	2	2	4	8	3
		14	7	28	49	17

Semester 3

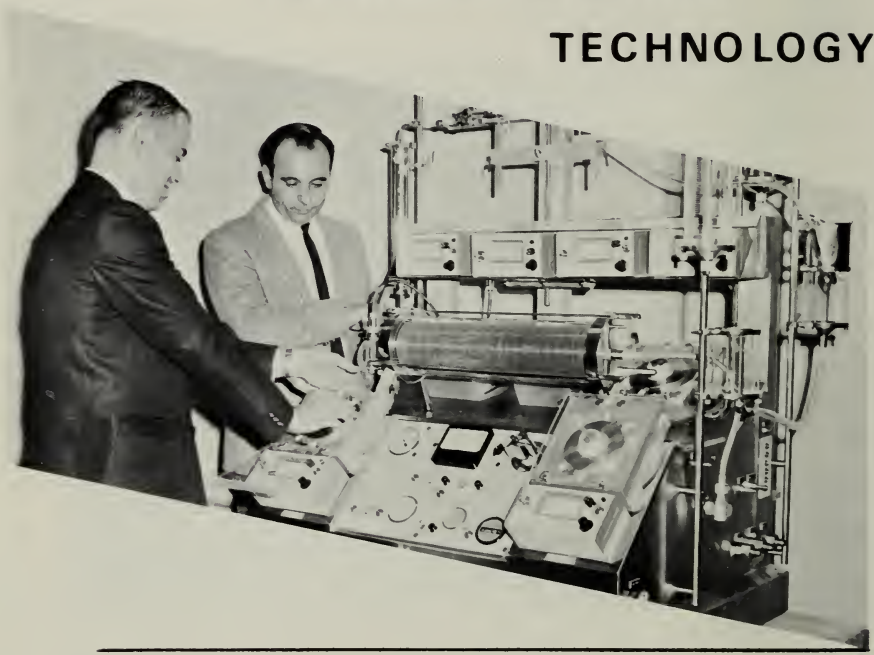
No.	Course Title*	Class	Lab	Prep	Units	Credit
3002	Chemistry 1	3	3	6	12	4
4014	Economics 1	3		6	9	3
5029	Business Policies/Management	3		6	9	3
6151	Engineering Graphics 701		3		3	1
6105	Fuel and Electric Systems 1	2	2	4	8	3
6103	Suspension and Brakes 1	2	2	4	8	3
		13	10	26	49	17

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1008	Technical Report Writing	3		6	9	3
5025	Accounting 15	3		6	9	3
3009	Automotive Chemistry	3	3	6	12	4
6104	Suspension and Brakes 2	2	2	4	8	3
6106	Fuel and Electric Systems 2	2	2	4	8	3
		13	7	26	46	16

*All courses required for graduation

BIO MEDICAL INSTRUMENTATION TECHNOLOGY



Instrumentation is being used increasingly in medical, biological, and research fields; and equipment has become so complex that technicians must have a detailed knowledge of bio-medical procedures and bio-medical terminology so that proper functioning of the equipment can be assured.

The course provides the general technical knowledge and understanding of the more commonly used bio-medical instruments, components, systems, and circuit techniques.

BIO-MEDICAL EQUIPMENT TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
2005	Mathematics 11	4		8	12	4
6125	Basic Electricity 391	3	4	6	13	4
6117	Electronic Devices 391	2	4	4	10	3
6004	Bio-Medical Techniques 391	2	3	4	9	3
1004	English Composition 1	3		6	9	3
		14	11	28	53	17

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
6118	Bio-Medical Measurements 391	2	3	4	9	3
6119	Electronic Circuits 391	2	3	4	9	3
6120	Electronic Amplifiers 391	3	3	6	12	4
6005	Bio-Medical Techniques 392	3	3	6	12	4
1005	English Composition 2	3		6	9	3
		13	12	26	51	17

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
6121	Bio-Medical Measurements 392	2	3	4	9	3
6122	Trouble Shooting 391	2	3	4	9	3
6002	Bio-Medical Electronic Systems 391	3	3	6	12	4
6006	Bio-Medical Techniques 393	3	3	6	12	4
4008	Introduction to Sociology 1	3		6	9	3
		13	12	26	51	17

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
6123	Bio-Medical Electronic Systems 392	2	3	4	9	3
6007	Bio-Medical Techniques 394	2	3	4	9	3
1007	Fundamentals of Speech	3		6	9	3
6124	Bio-Med Design/Equip. Selection 391	3	3	6	12	4
		13	9	26	48	16

*All courses required for graduation

CONSTRUCTION TECHNOLOGY

The Construction Technology program is designed to provide an engineering background for young men wishing to enter the building industry. Specialized techniques applicable to residential and light commercial buildings are stressed. Certain phases of heavy construction and road construction are also covered. Optional programs can be made available to students wishing to concentrate in these latter areas.

CONSTRUCTION TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2005	Mathematics 11	4		8	12	4
3002	Chemistry 1	3	3	6	12	4
6173	Construction Materials	3		6	9	3
6069	Engineering Graphics 1	1	3	2	6	2
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2006	Mathematics 12	4		8	12	4
3012	Physics 1	3	3	6	12	4
6160	Architectural Design and Spec. 1	2	3	4	9	3
	Humanities Elective	3		6	9	3
		15	6	30	51	17

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
6058	Strength of Materials	3		6	9	3
6092	Surveying 1	2	6	4	12	4
6096	Soils and Foundations	3		6	9	3
6161	Architectural Design and Spec. 2	2	3	4	9	3
6164	General Construction Lab		3		3	1
		13	12	26	51	17

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1008	Technical Report Writing	3		6	9	3
6165	Construction Methods and Equipment	3		6	9	3
6163	Construction Estimating	3		6	9	3
6097	Roadway Design and Construction	3	3	6	12	4
6177	Construction Management	3		6	9	3
		15	3	30	48	16

*All courses required for graduation

IBM COMPUTER
MODEL 360

Computer

IBM COMPUTER
MODEL 1620

Center

DATA PROCESSING TECHNOLOGY AND COMPUTER CENTER

Engineering and scientific data processing is a technology used for the rapid analysis of data, for the solution of complicated formulae, and for the development of instructions used in numerically controlled machine tools. Management uses this technology as a tool for converting raw data into useful information concerning the economy, markets, production, and inventory. The tools of the data processing profession include use of punched card and computer equipment operating automatically at high speeds with extreme accuracy.

Students planning to enter this field require analytical and creative ability. In addition, they need an understanding of the mathematical processes used in engineering and science and the basic accounting and control functions in business.

The Data Processing program prepares a student to enter industry as a trained junior programmer. With additional education and work experience, he may advance to a systems specialist. The program meets academic requirements for becoming a Certified Data Processor.

DATA PROCESSING TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
6008	Intro. to Data Processing	3		6	9	3
6009	Fortran	3		6	9	3
5023	Accounting 1	4		8	12	4
1004	English Composition 1	3		6	9	3
	Mathematics Elective	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
6011	Bal Basic Assembly Language	3		6	9	3
6017	RPG Report Program Generator	3		6	9	3
5024	Accounting 2	4		8	12	4
1005	English Composition 2	3		6	9	3
	Mathematics Elective	3		6	9	3
		16		32	48	16

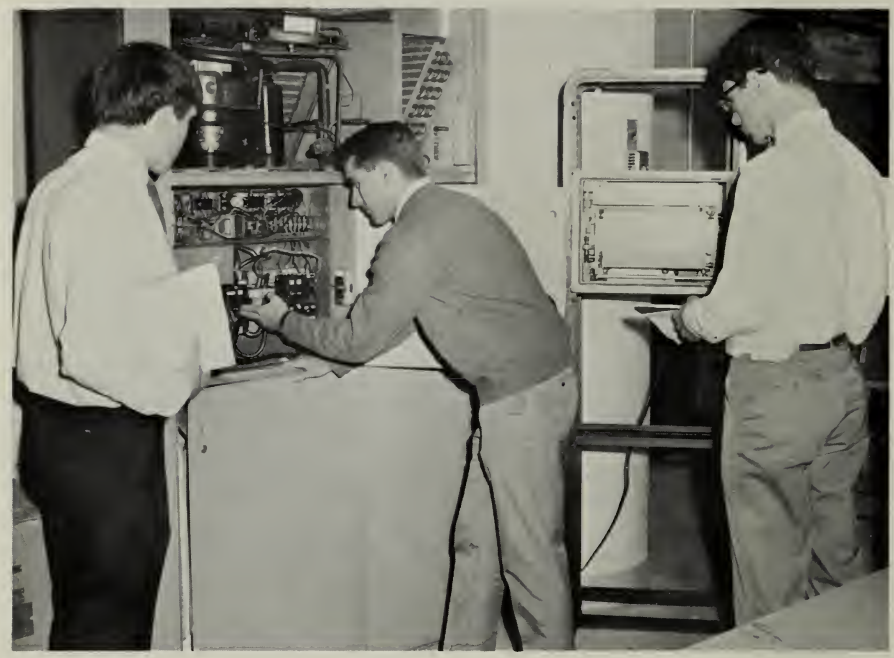
Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
6012	Cobol 1	3		6	9	3
6202	DP Systems and Procedures	3		6	9	3
5026	Cost Accounting	3		6	9	3
	Social Science Elective	3		6	9	3
	Humanities Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
6013	Cobol 2	3		6	9	3
6015	TOS DOS Tape and Disk Operating System	3		6	9	3
2016	Statistics	3		6	9	3
	Humanities Elective	3		6	9	3
	Social Science Elective	3	3	3	9	3
		15	3	27	45	15

*All courses required for graduation



ELECTRICAL TECHNOLOGY

The Electrical Technology program prepares students for work in the development, installation, and maintenance of industrial automated systems or related instrumentation applications. Graduates of the program have also been successful as field representatives for manufacturers in the areas of product application and sales.

Students planning to enter this field should have a desire for constructive achievement and for involvement in mathematics, science, and technology.

ELECTRICAL TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
6018	Fundamentals of Electricity 311	3	3	6	12	4
6071	Engineering Graphics 311	3		6	9	3
2005	Mathematics 11	4		8	12	4
1004	English Composition 1	3		6	9	3
4073	Human Relations at Work 3	3		6	9	3
		16	3	32	51	17

Semester 2

No.	Course Title*	Class	Lab	Prep	Untis	Credit
6025	AC Fundamentals	3	3	6	12	4
6023	Fundamentals of Electronics 311	4		8	12	4
2006	Mathematics 12	4		8	12	4
1005	English Composition 2	3		6	9	3
4093	Industrial Psychology	3		6	9	3
		17	3	34	54	18

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
6028	DC Industrial Applications	2	3	4	9	3
6030	Industrial Electronics Tubes/Circuits	2	3	4	9	3
6033	Semiconductors/Transistors 1	2	3	4	9	3
2007	Mathematics 13	4		8	12	4
3012	Physics 1	3	3	6	12	4
		13	12	26	51	17

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
6031	Industrial Electro-Mech Systems	2	3	4	9	3
6026	Fundamentals of Instrumentation	2	3	4	9	3
6034	Semiconductors/Transistors 2	2	2	4	8	3
1007	Fundamentals of Speech	3		6	9	3
1008	Technical Report Writing	3		6	9	3
6032	Electro-Mech Circuit Design	1		4	5	2
		13	8	28	49	17

*All courses required for graduation

ELECTRONIC TECHNOLOGY

The Electronic Technology course is organized to present learning activities that will qualify the graduate to perform job functions in areas such as communications, control systems, computers, electronic drafting, circuit design, and systems testing.

Training for a wide range of jobs is provided by a two year technical program of specialized, intensive instruction designed to fit individuals for useful employment as highly skilled technicians in the electronics field.

ELECTRONIC TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4073	Human Relations at Work 3	3		6	9	3
2005	Mathematics 11	4		8	12	4
6178	Electronics Lab 1		3		3	1
6019	Fundamentals of Electronics 1	5		10	15	5
		15	3	30	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2006	Mathematics 12	4		8	12	4
3012	Physics 1	3	3	6	12	4
6179	Electronics Lab 2		3		3	1
6024	Fundamentals of Electronics 2	5		10	15	5
		15	6	30	51	17

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
1008	Technical Report Writing	3		6	9	3
2009	Mathematics 16 Computer Logic	3		6	9	3
6036	Electronic Instrumentation	3		6	9	3
6037	Pulse Shaping Techniques	3		6	9	3
6035	Semiconductor Circuits	3		6	9	3
6180	Electronics Lab 3		3		3	1
		15	3	30	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1007	Fundamentals of Speech	3		6	9	3
4014	Economics 1	3		6	9	3
6027	Introduction to Computer Circuitry	3		6	9	3
6029	Industrial Electronics	3		6	9	3
6038	Ultra High Frequency Techniques	3		6	9	3
6181	Electronics Lab 4		3		3	1
		15	3	30	48	16

*All courses required for graduation

ENVIRONMENTAL AND PROCESS TECHNOLOGY

The pollution of man's environment by man has emerged as one of the biggest problems of the century. We must take vigorous action, now, if life as we know it is to be possible, on earth, in the future.

The Environmental Technology Program is designed to prepare students for employment as technicians, inspectors or operators in governmental pollution control agencies, industrial pollution control facilities, engineering consulting firms, municipal engineering offices, waste treatment plants, and related facilities. It is oriented toward environmental and chemical engineering with the objective of training paraprofessionals who can assist the engineer in detecting, measuring, and controlling pollution.

Students planning to enter this field should be interested in both science and mathematics.

ENVIRONMENTAL AIR/PROCESS TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
2005	Mathematics 11	4		8	12	4
3086	Chemistry 11	3	3	6	12	4
1004	English Composition 1	3		6	9	3
6182	Process Graphics	1	3	2	6	2
	Elective	3		6	9	3
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
6191	Process Problems	3	3	6	12	4
3012	Physics 1	3	3	6	12	4
3087	Chemistry 12	3	3	6	12	4
1007	Technical Report Writing	3		6	9	3
2016	Statistics	3		6	9	3
		15	9	30	54	18

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
3094	Environmental Pollution	3		6	9	3
6184	Environmental Unit Processes	3	3	6	12	4
6185	Air Pollution Meterology	2	3	4	9	3
6196	Industrial Electricity	2	3	4	9	3
	Elective	3		6	9	3
		13	9	26	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
6197	Air Pollution Control Processes	3		6	9	3
6198	Air Pollution Instrumentation	3		6	9	3
6199	Air Pollution Laboratory		3		3	1
6201	Industrial Health and Safety	3		6	9	3
6200	Air Sampling and Analysis	3	3	6	12	4
	Elective	3		6	9	3
		15	6	30	51	17

*All courses required for graduation

ENVIRONMENTAL PLANT/PROCESS TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
2005	Mathematics 11	4		8	12	4
3086	Chemistry 11	3	3	6	12	4
1004	English Composition 1	3		6	9	3
6182	Process Graphics	1	3	2	6	2
	Elective	3		6	9	3
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
6191	Process Problems	3	3	6	12	4
3012	Physics 1	3	3	6	12	4
3087	Chemistry 12	3	3	6	12	4
1007	Technical Report Writing	3		6	9	3
2016	Statistics	3		6	9	3
		15	9	30	54	18

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
6195	Fund. of Treatment Plant Operations	3		6	9	3
3089	Chemistry of Liquid Wastes	3	3	6	12	4
3088	Environmental Microbiology	2	3	4	9	3
6196	Industrial Electricity	2	3	4	9	3
	Elective	3		6	9	3
		13	9	26	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
6192	Treatment Plant Unit Operations	3		6	9	3
6193	Treatment Plant Instrumentation	3		6	9	3
6194	Treatment Plant Laboratory		3		3	1
6201	Industrial Health and Safety	3		6	9	3
6190	Systems Operations and Maintenance	4		8	12	4
	Elective	3		6	9	3
		16	3	32	51	17

*All courses required for graduation

ENVIRONMENTAL WATER/PROCESS TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
2005	Mathematics 11	4		8	12	4
3086	Chemistry 11	3	3	6	12	4
1004	English Composition 1	3		6	9	3
6182	Process Graphics	1	3	2	6	2
	Elective	3		6	9	3
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
6191	Process Problems	3	3	6	12	4
3012	Physics 1	3	3	6	12	4
3087	Chemistry 12	3	3	6	12	4
1007	Technical Report Writing	3		6	9	3
2016	Statistics	3		6	9	3
		15	9	30	54	18

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
3094	Environmental Pollution	3		6	9	3
6184	Environmental Unit Processes	3	3	6	12	4
3088	Environmental Microbiology	2	3	4	9	3
6196	Industrial Electricity	3		6	9	3
	Elective	3		6	9	3
		14	6	28	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
6187	Water Pollution Unit Operations	3		6	9	3
6188	Water Pollution Instrumentation	3		6	9	3
6189	Water Pollution Laboratory		3		3	1
6201	Industrial Health and Safety	3		6	9	3
3095	Water Sampling and Analysis	3	3	6	12	4
	Elective	3		6	9	3
		15	6	30	51	17

*All courses required for graduation

GRAPHIC ARTS TECHNOLOGY

The Graphic Arts Department offers courses designed to prepare students for the many and varied careers available in the commercial printing, book, newspaper, or advertising business. The course provides for basic training and instruction in layout and design; copy preparation; process photography, both black and white, and color; typography; letterpress; and lithographic presswork, and finishing, as well as silk screening.

Students who complete the program are prepared to seek employment in the printing and publishing field. With additional practical experience, graduates can become technical specialists in typesetting, presswork, plate production, and copy preparation. Graduates also find opportunities in such specialized fields as production planning, quality control, advertising production, sales promotion, selling, purchasing, and estimating.

Rochester Institute of Technology, as well as other institutions offering graphic arts speciality courses, have indicated they will accept credits from this program toward an advanced degree in Printing and Publishing.

A knowledge of typing is a prerequisite for students planning to enroll in the Graphic Arts Technology course.

GRAPHIC ARTS TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4086	General Psychology	3		6	9	3
4014	Economics 1	3		6	9	3
6077	Graphic Arts Processes 1	1	3	2	6	2
2008	Mathematics 15	4		8	12	4
6083	Layout and Copy Preparation	2	3	4	9	3
		16	6	32	54	18

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
	Humanities Elective	3		6	9	3
3002	Chemistry 1	3	3	6	12	4
6114	Typography and Copy Preparation	2	3	4	9	3
6078	Graphic Arts Processes 2	1	3	2	6	2
		12	9	24	45	15

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
	Humanities Elective	3		6	9	3
3005	General Chemistry 21	3	3	6	12	4
6075	Process Photography (Elective)	1	4	2	7	3
6203	Advertising Design (Elective)	1	4	2	7	3
6062	Printing Management (Elective)	3		6	9	3
6144	Production Techniques 1		9		9	3
		11	20	22	53	19

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
	Humanities Elective	3		6	9	3
3006	General Chemistry 22	3	3	6	12	4
6145	Production Techniques 2		9		9	3
6204	Offset Strip and Plate (Elective)	1	4	2	7	3
6205	Offset Presswork (Elective)	1	4	2	7	3
6206	Advanced Typography (Elective)	1	4	2	7	3
		9	24	18	51	19

*At least four of the six Graphic Arts electives must be taken for graduation
All other courses are required for graduation

HEATING AND POWER ENGINEERING TECHNOLOGY

Both theoretical and practical training are provided for persons who desire to enter this field. Instruction is directed toward meeting the need for technically trained personnel in sales, system design and layout, and supervision of equipment installation, maintenance, and servicing. The program develops the necessary background in mathematics, drafting, electricity, thermodynamics, and human relations, plus theory and laboratory work in heating, steam generation, burners, and controls.

HEATING AND POWER ENGINEERING TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2005	Mathematics 11	4		8	12	4
4073	Human Relations at Work 3	3		6	9	3
6073	Engineering Graphics 331	1	3	2	6	2
6020	Fundamentals of Electricity 331	3	3	6	12	4
6110	Mechanical Skills and Procedures 1		6		6	2
		14	12	28	54	18

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2006	Mathematics 12	4		8	12	4
6044	Hydronic Layouts and Construction	2	3	4	9	3
6040	Control Circuits and Applications 1	3	3	6	12	4
6111	Mechanical Skills and Procedures 2		6		6	2
		12	12	24	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
1007	Fundamentals of Speech	3		6	9	3
3002	Chemistry 1	3	3	6	12	4
6041	Control Circuits and Applications 2	2	6	4	12	4
6042	Heating System Design	2	3	4	9	3
6155	Power Plant Operation 1	1	3	2	6	2
		11	15	22	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1008	Technical Report Writing	3		6	9	3
3008	Chemistry of Water/Fuels	3	3	6	12	4
6043	Advanced Heating System Design	2	3	4	9	3
6045	Heating and Power Laboratory	2	6	4	12	4
6156	Power Plant Operation 2	1	3	2	6	2
		11	15	22	48	16

*All courses required for graduation

LANDSCAPE TECHNOLOGY

Students enrolling in this program will receive a broad base in the maintenance and development of land areas. Topics such as plant identification and use, insect and disease control, studies of turf and soils, and construction methods will be included in the curriculum. The importance of qualified landscape personnel who will be able to carry out and maintain work designed by others will be stressed. Students will be given an appreciation and understanding of the effects that may be created by good design.

Graduates of the program may be employed by landscape contractors, nurserymen, in public and private parks, and by business firms as grounds maintenance specialists. With the development today of more complex and varied materials in this field, there is an increasing need for properly trained men to fill responsible field positions.

LANDSCAPE TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2008	Mathematics 15	4		8	12	4
6139	Landscape Machine Maintenance	1	3	2	6	2
4073	Human Relations at Work	3		6	9	3
3021	Botany 1	2	2	4	8	4
6088	Principles of Landscape Operations	1	3	2	6	2
		14	8	28	50	18

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
3022	Botany 2	1	4	4	9	3
3025	Entomology	1	2	3	6	2
6095	Soils and Fertilizers	2	2	4	8	3
6140	Engineering Graphics 721		6	2	8	3
3002	Chemistry 1	3	3	6	12	4
		10	17	25	52	18

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
3023	Botany 3	1	4	4	9	3
6090	Landscape Maintenance		6	4	10	3
6087	Landscape Design	1	4	4	9	3
6093	Surveying 721	1	4	3	8	3
6089	Landscape Operations Planting	1	3	4	8	3
		4	21	19	44	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
3024	Botany 4	2	2	4	8	3
6086	Planting Design	1	4	4	9	3
6094	Construction Methods	2	3	5	10	4
6085	Nursery Practice and Propagation	2	3	4	9	3
6177	Construction Management	3		6	9	3
		10	12	23	45	16

*All courses are required for graduation

MACHINE AND TOOL DESIGN TECHNOLOGY

This course is concerned with the design, testing, manufacturing, and development of products, machines and mechanical systems.

In the design laboratory, each student is given the opportunity to use his initiative and creative ability in designing a project of his own.

Prerequisites for the course are a background in mechanical drawing, algebra, and geometry.

Graduates are employed as layout and detail draftsmen, tool designers, machine designers, checkers, research assistants, manufacturing systems assistants, field service technicians, sales engineers, and mechanical and industrial engineering aides.

MACHINE AND TOOL DESIGN TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
2005	Mathematics 11	4		8	12	4
3002	Chemistry 1	3	3	6	12	4
6054	Manufacturing Processes 1	2	3	4	9	3
6065	Tool Design 1	2	6	4	12	4
		14	12	28	54	18

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credits
1005	English Composition 2	3		6	9	3
2006	Mathematics 12	4		8	12	4
3012	Physics 1	3	3	6	12	4
6055	Manufacturing Processes 2	2	3	4	9	3
6113	Tool Design 2	2	6	4	12	4
		14	12	28	54	18

Semester 3

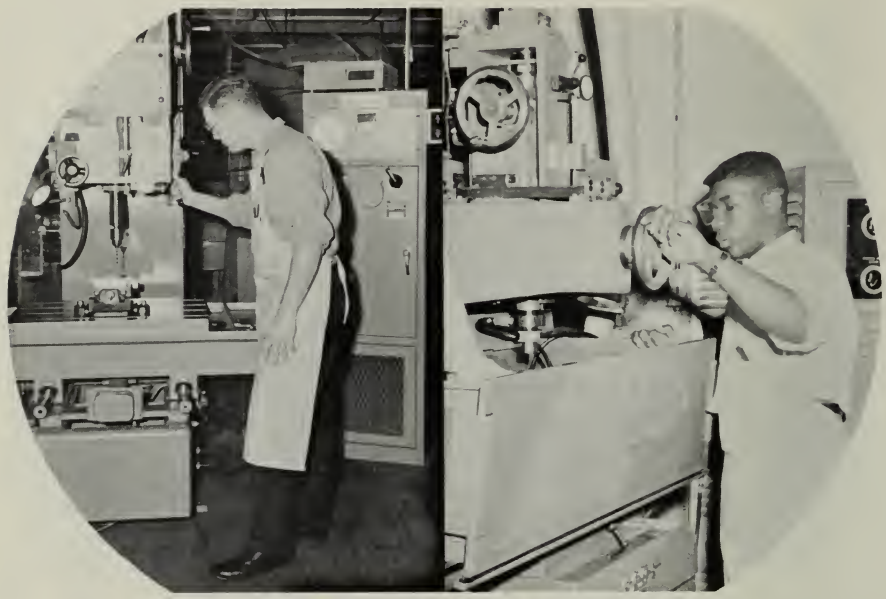
No.	Course Title*	Class	Lab	Prep	Units	Credit
4073	Human Relations at Work 3	3		6	9	3
6058	Strength of Materials	3		6	9	3
6150	Fluid Power	3		6	9	3
6066	Design of Machine Elements	2	6	4	12	3
6157	General Engineering Lab 1	1	3	2	6	2
		12	9	24	45	14

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1008	Technical Report Writing	3		6	9	3
6064	Material Science	3		6	9	3
6067	Machine Design 1	2	6	4	12	4
6158	General Engineering Lab 2	1	3	2	6	2
3013	Physics 2	3	3	6	12	4
		12	12	24	48	16

*All courses required for graduation

MECHANICAL TECHNOLOGY
(Production Option)



The nature of industry today makes it more important than ever that applicants for employment have a high degree of technical competence. The purpose of the Production Technology curriculum is to prepare qualified young people of our community to fill the growing demand in industry and business for engineering technicians in the mechanical field.

Recent studies of our complex industrial economy show a critical need for engineering technicians. Many more are needed than can be supplied by two-year colleges, which explains why graduates of this curriculum have little difficulty finding jobs.

Initial employment opportunities are in the area between the skilled craftsman and the professional engineer with the emphasis in the direction of the engineer.

MECHANICAL TECHNOLOGY (Production Option)

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2005	Mathematics 11	4		8	12	4
3002	Chemistry 1	3	3	6	12	4
6069	Engineering Graphics 1	1	3	2	6	2
6054	Manufacturing Processes 1	2	3	4	9	3
		13	9	26	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2006	Mathematics 12	4		8	12	4
3012	Physics 1	3	3	6	12	4
6052	Engineering Analysis 1	2	3	4	9	3
6055	Manufacturing Processes 2	2	3	4	9	3
		14	9	28	51	17

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
	Humanities Elective	3		6	9	3
3013	Physics 2	3	3	6	12	4
2015	Statistics and Quality Control	3		6	9	3
6064	Material Science	3		6	9	3
6059	Work Simplification	3		6	9	3
6157	General Engineering Lab 1	1	3	2	6	2
		16	6	32	54	18

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
	Humanities Elective	3		6	9	3
6061	Production Control	3		6	9	3
6063	Materials Handling and Plant Layout	3		6	9	3
6053	Engineering Analysis 2	2		4	6	2
6150	Fluid Power	3		6	9	3
6158	General Engineering Lab 2	1	3	2	6	2
6060	Process Planning and Methods	3		6	9	3
		18	3	36	57	19

*All courses required for graduation

Busy Hands

Allied Health Sciences

- Dental Hygienist
- Early Childhood Technology
- Inhalation Therapy Technician
- Medical Assistant

- Medical Laboratory Technician (MLT)
- Mental Health Technician
- Nursing
- Physical Therapy Assistant

- Radiologic Technology

The Division of Allied Sciences curricula is designed to prepare men and women for careers as professional or semi-professional occupations in the field of Health Services. The Associate in Science degree (AS): is awarded upon successful completion of the two year, programs.

DIVISION OF ALLIED HEALTH SCIENCES

The trend in medicine shows itself not only in the burgeoning demand for health care and in the shortages of personnel in all traditional categories, but also in the emerging need for skills of new kinds and at new levels of competence.

Attention is now focused on the Community College as a major resource for the training of new technical health personnel. Collaborative efforts with professionals in medicine will help to prepare for new approaches to education and programs to meet a multiplicity of demands for higher skills.

The Division of Allied Health Sciences is strongly committed to an educational program that will provide a foundation for intellectual, cultural, and social growth in addition to highly specialized training. To broaden their educational base, the College requires students to take courses in communications, biology, humanities, physical science, and social science. These courses, along with general medical subjects, constitute a general education core. Variations and options within the general education core are available in certain curricula. Where such variations and options are available, they will be listed in the specific curriculum.

THE GENERAL EDUCATION CORE

COURSE	NUMBER*	CREDITS
English	1004, 1005, 1007	6-9
Social Science	4008, 4009, 4014	6-9
Behavioral Science	4085, 4086, 4087, 4092	3-9
Biological Science	3028, 3080, 3091, 3092	8-12
Physical Science	3004, 3014, 3082, 3083, 3084	8-10

*See numeral course list for titles.

DENTAL HYGIENIST

The impetus for the development of a dental hygiene program has been a joint effort of the Valley District Dental Society and the Springfield Technical Community College. A recent feasibility study has further identified the ever-increasing need for dental hygienists qualified by education and licensure to meet the dental health needs of our community.

As a practicing member of the dental health team, the dental hygienist works under the supervision of a dentist in helping individuals maintain oral health and prevent dental diseases and disorders.

A fully equipped 16 chair dental clinic will provide training in specialized skills integrated with an enriched academic experience leading to an Associate in Science Degree.

Required subjects will include courses in liberal arts, dental sciences, and supervised dental practice. College preparatory courses and a high school background in mathematics and in the sciences, including biology and chemistry, are desirable.

EARLY CHILDHOOD TECHNOLOGY

Designed to meet the ever expanding needs for trained child care workers, the Early Childhood Technology program provides both general education studies and specific skills gained through class and laboratory experiences.

Graduates of the two-year program will be prepared to help teachers and other professionals in nonpublic, preschool contexts such as: nursery schools, private kindergartens, health care agencies, institutions, and other organizations and agencies offering child care services. In addition, the trained technician will also play an important role as a supportive member of the professional team involved in the daily care and development of the young child.

EARLY CHILDHOOD TECHNOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
3080	Biology 1	3	3	6	12	4
7101	Intro. to Early Childhood Education	3		6	9	3
7102	Child Growth and Development 1	3		6	9	3
	Music or Art	3		6	9	3
		15	3	30	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4086	General Psychology	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
7103	Child Growth and Development 2	3		6	9	3
7104	Intro. to Creative Experience	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
1007	Fundamentals of Speech	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
7106	Prin. and Prac. of Early Childhood Learning	3		6	9	3
7107	Obser. and Recording of Child Behavior	3		6	9	3
7105	Creative Experience Workshop	3	3	6	12	4
		15	3	30	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
7108	Dynamics of Childhood Behavior	3		6	9	3
7109	Supervised Student Practicum		18		18	6
7110	Seminar and Critique	3		6	9	3
	Elective	3		6	9	3
		9	18	18	45	15

*All courses required for graduation

INHALATION THERAPY TECHNICIAN

Inhalation Therapy is one of the newest fields in hospital work and has received considerable attention in recent years due to public interest in the problems of air pollution and smoking. The inhalation therapist administers treatments and medications to deal with diseases of the respiratory tracts such as emphysema, bronchitis, and industrial diseases. Therapists also carry out various diagnostic tests to help the physician in determining the proper course of treatment for his patient.

The graduate registered therapist is assured of rapid advancement in a field where there are twenty times as many jobs as therapists to fill them. While the greater number of graduates work in hospitals or hold teaching positions, the future will undoubtedly see openings in industry, rehabilitation centers, and home care programs.

The program is sponsored by the Mercy Hospital in cooperation with the Springfield Technical Community College and is approved by the Board of Schools of Inhalation Therapy. Other affiliating agencies include Holyoke Hospital and Springfield Hospital Medical Center.

INHALATION THERAPY TECHNICIAN

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2010	Mathematics 17	4		8	12	4
4008	Introduction to Sociology 1	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
7078	Fundamentals of Inhalation Therapy	3		6	9	3
		16	3	32	51	17

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
3004	Chemistry 20	3	3	6	12	4
4009	Introduction to Sociology 2	3		6	9	3
4086	General Psychology	3		6	9	3
3092	Anatomy and Physiology 2		3	6	12	4
		15	6	30	51	17

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
3028	Microbiology	3	3	6	12	4
3014	Physics 14	3	3	6	12	4
7012	Inhalation Therapy Applications/Clinical Sciences	3	12	6	21	6
		12	18	24	54	17

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
7029	Medical Assisting Procedures 1	3		6	9	3
7009	Inhalation Therapy Theory/Clinical Prac. 1	3	12	6	21	6
7010	Inhalation Therapy Theory/Clinical Prac. 2	3	12	6	21	6
		9	24	18	51	15

Summer Special

No.	Course Title*
7001	Special Clinical Practice/Summer 481

*All courses required for graduation

SPRINGFIELD MUNICIPAL HOSPITAL

WESSON MEMORIAL HOSPITA

SPRINGFIELD HOSPITAL MEDICAL CENTER

WESSON WOMEN'S HOSPITAL

Springfield Hospitals

AFFILIATED WITH SPRINGFIELD
TECHNICAL COMMUNITY COLLEGE

MERCY HOSPITAL

MEDICAL ASSISTANT

The two-year program prepares students to meet the rigorous demands of today's practicing physician and his need for a skilled Medical Assistant to handle the increasing administrative and technical details of his medical practice. General education and technical studies prepare the Medical Assistant to perform at various levels of career interest, knowledge, and skills.

An opportunity for a unit of supervised clinical experience in cooperating health agencies is provided during the fourth semester.

Graduates are qualified to accept positions in medical offices, hospitals, or other community health service agencies.

For students seeking a job entry career, the option for a one-year certificate program will provide an opportunity for placement in medical settings requiring knowledge of routine office procedures.

MEDICAL ASSISTANT

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
7002	Foundations of Health Services	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
7027	Medical Assistant Techniques 1	3	3	6	12	4
5008	Typewriting 1	2	3	4	9	3
		14	9	28	51	17

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
3092	Anatomy and Physiology 2	3	3	6	12	4
7028	Medical Assistant Techniques 2	3	6	9	18	5
5009	Typewriting 2	2	3	4	9	3
5005	Medical/Dental Records	2		4	6	2
		13	12	29	54	17

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
1007	Fundamentals of Speech	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
4086	General Psychology	3		6	9	3
5031	Our Legal Environment	3		6	9	3
3028	Microbiology	3	3	6	12	4
		15	3	30	48	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4009	Introduction to Sociology 2	3		6	9	3
4085	Child and Developmental Psychology	3		6	9	3
	Elective	3		6	9	3
7080	Medical Assisting Seminar and Field Work	3	12	6	21	6
		12	12	24	48	15

*All courses required for graduation

MEDICAL LABORATORY TECHNICIAN (MLT)

The development of increasingly complex and sophisticated procedures in laboratory medicine requires technical personnel who will be able to perform competently at various levels of knowledge and skill. The MLT program is designed to provide new and higher levels of competence by offering an interrelated program combining the general education and clinical-laboratory practice segments required to keep pace with the evolving laboratory personnel needs. Planned in cooperation with supervising pathologists and medical technologists, the curriculum extends educational opportunity and provides both career and educational mobility.

Graduates are eligible to take the National Certification examination. Those who qualify may indicate certification by placing the letters MLT after names.

MEDICAL LABORATORY TECHNICIAN (MLT)

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1007	Fundamentals of Speech	3		6	9	3
3091	Anatomy and Physiology 1	3		6	12	4
7031	Introductory Clinical Lab	4	9	8	20	6
7032	Hematology and Serology	3	10	6	17	5
		13	22	26	58	18

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
3092	Anatomy and Physiology 2	3	3	6	12	4
7033	Clinical Chemistry	4	8	8	20	6
7034	Blood Bank and Coagulation	4	8	8	20	6
		11	19	22	52	16

Summer Special

No.	Course Title*
7035	Clinical Lab Practicum

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2080	Finite Mathematics 1	3		6	9	3
3080	Biology 1	3	3	6	12	4
3005	General Chemistry 21	3	3	6	12	4
		12	6	24	42	14

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
2081	Finite Mathematics 2	3		6	9	3
3081	Biology 2	3	3	6	12	4
3006	General Chemistry 22	3	3	6	12	4
		12	6	24	42	14

*All courses required for graduation

MENTAL HEALTH TECHNICIAN

This program prepares a generalized, multi-service worker to assist the "professional" in performing a variety of assigned tasks in areas of human services. Recognition is given to the important concept of the multi-discipline team in community service work. Preparation of qualified personnel trained at the community college level will help to meet both the manpower and emerging needs escalating in all areas of mental health, public health, and social services.

In addition to the general education courses, field work and studies will include lectures, field trips, and a rotating supervised practicum in selected community service organizations.

MENTAL HEALTH TECHNICIAN

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
7017	Field Work and Studies 1	3	3	6	12	4
3093	Human Anatomy	3		6	9	3
4086	General Psychology	3		6	9	3
		15	3	30	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
7018	Field Work and Studies 2	3	3	6	12	4
4085	Child and Developmental Psychology	3		6	9	3
1007	Fundamentals of Speech	3		6	9	3
		15	3	30	48	16

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
4092	Psychology of Human Adj. and Per. Effect	3		6	9	3
5008	Typewriting 1 or Elective	2	3	4	9	3
7019	Seminar Field Work and Studies 3	3	6	6	15	6
		11	9	22	42	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
	Elective	3		6	9	3
7020	Supervised Practicum/Field Work/Studies 4		18		18	6
4087	Principles of Normal/Abnormal Behavior	3		6	9	3
7022	Seminar and Review	3		6	9	3
		9	18	18	45	15

*All courses required for graduation

NURSING

The nursing curriculum is planned to prepare young men and women as professional nurses who will be competent to render safe and effective nursing care to people, within the normal life cycle, both in health and illness. The community centered approach combines both liberal and technical education for the student within the college and health agencies.

The student who successfully completes the prescribed curriculum earns the degree of Associate in Science (AS) and is eligible to write the licensing examination to qualify as a Registered Nurse.

NURSING

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
4086	General Psychology	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
7072	Fundamentals of Nursing	3	9	6	18	6
		12	12	24	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
3028	Microbiology	3	3	6	12	4
4085	Child and Developmental Psychology	3		6	9	3
3092	Anatomy and Physiology 2	3	3	6	12	4
7073	Paternal-Child Nursing	3	12	6	21	7
		12	18	24	54	18

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
7074	Mental-Physical Illness 1	4	15	8	27	9
	Elective	3		6	9	3
		13	15	26	54	18

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4087	Principles of Normal/Abnormal Behavior	3		6	9	3
7077	Nursing Seminar	2		2	4	2
7075	Mental-Physical Illness 2	2	9	4	15	5
7076	Mental-Physical Illness 3	2	9	4	15	5
	Elective	3		6	9	3
		12	18	22	52	18

*All courses required for graduation

PHYSICAL THERAPY ASSISTANT

The physical therapy assistant is trained to function as a skilled technical health worker within a physical therapy service. Working under the direction and supervision of the professional physical therapist to whom she is responsible, the assistant performs patient-related activities which contribute to total patient care. Routine treatment procedures are performed in accordance with a planned program. The assistant also observes, records, and reports to his supervisor the reactions and responses of the patient as well as the conditions related to his assigned duties.

PHYSICAL THERAPY ASSISTANT

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
7002	Foundations of Health Services	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
4008	Introduction to Sociology 1	3		6	9	3
7037	Physical Therapy Assistant 1	2	3	4	9	3
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
3092	Anatomy and Physiology 2	3	3	6	12	4
4009	Introduction to Sociology 2	3		6	9	3
7006	Dynamics of Human Motion	3		6	9	3
7038	Physical Therapy Assistant 2	2	3	4	9	3
		14	6	28	48	16

Semester 3

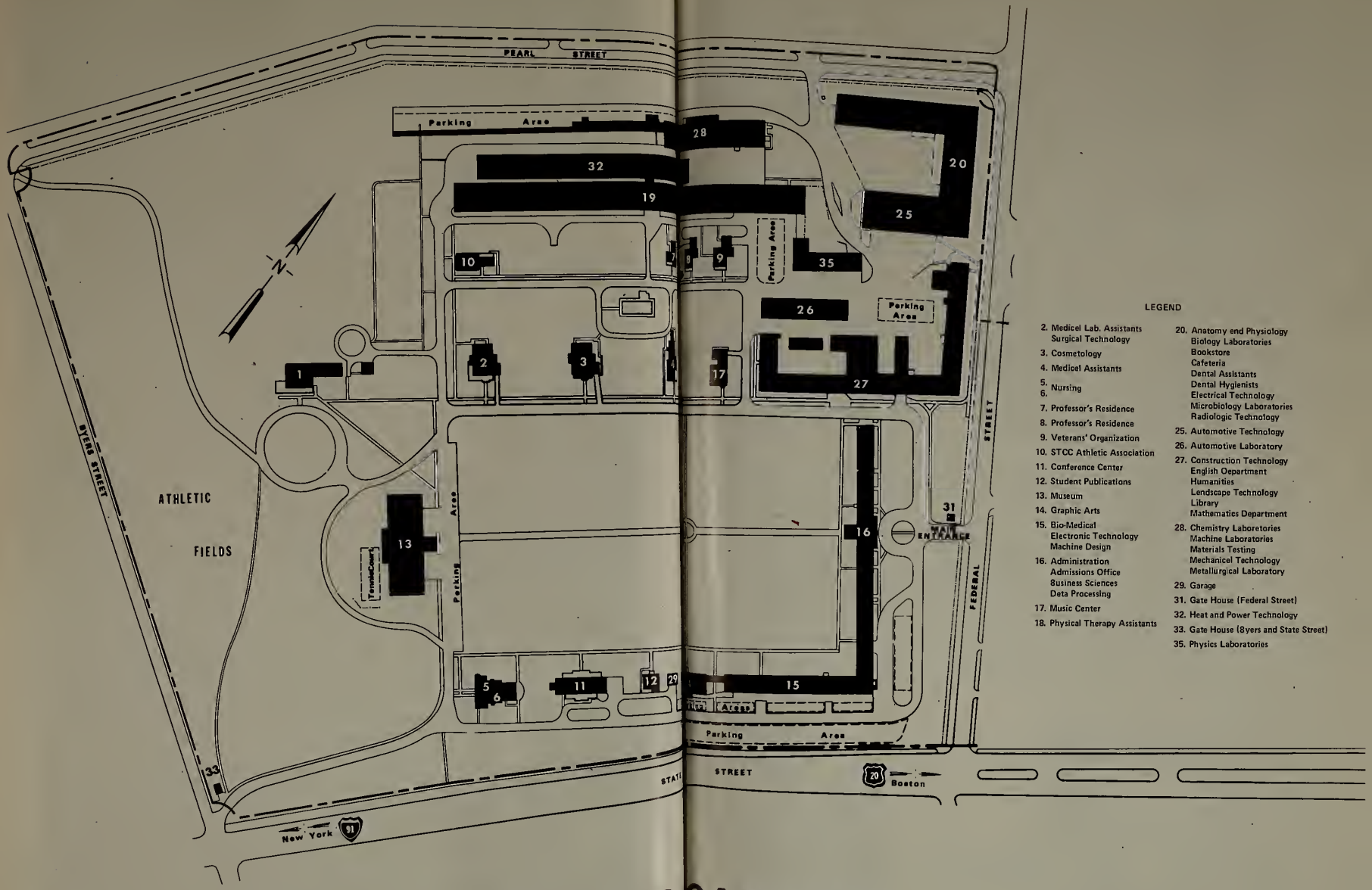
No.	Course Title*	Class	Lab	Prep	Units	Credit
4014	Economics 1	3		6	9	3
4086	General Psychology	3		6	9	3
7003	Medical Lectures	3		6	9	3
	Elective	3		6	9	3
7039	Physical Therapy Assistant 3	2	3	4	9	3
		14	3	28	45	15

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4092	Psychology of Human Adj. & Per. Effect	3		6	9	3
7042	Physical Therapy Assistant Seminar	1		2	2	1
7040	Supervised Clinical Experience 441		18		18	6
7041	Supervised Clinical Experience 442		18		18	6
		4	36	8	47	16

*All courses required for graduation

Campus Green

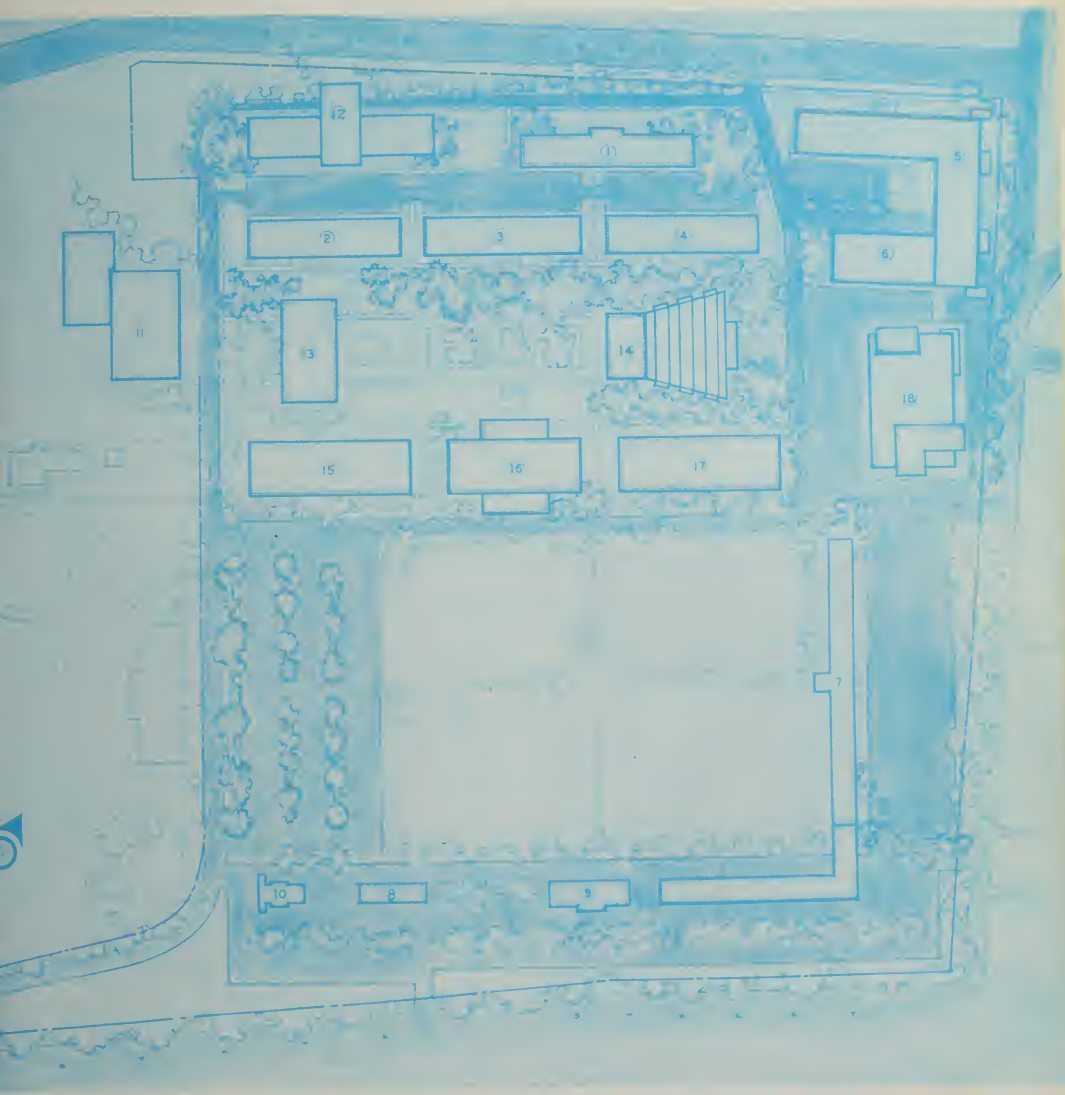


LEGEND

2. Medical Lab. Assistants
   Surgical Technology
3. Cosmetology
4. Medical Assistants
5. Nursing
6. Nursing
7. Professor's Residence
8. Professor's Residence
9. Veterans' Organization
10. STCC Athletic Association
11. Conference Center
12. Student Publications
13. Museum
14. Graphic Arts
15. Bio-Medical
    Electronic Technology
    Machine Design
16. Administration
    Admissions Office
    Business Sciences
    Deta Processing
17. Music Center
18. Physical Therapy Assistants
20. Anatomy end Physiology
    Biology Laboratories
    Bookstore
    Cafeteria
    Dental Assistants
    Dental Hygienists
    Electrical Technology
    Microbiology Laboratories
    Radiologic Technology
25. Automotive Technology
26. Automotive Laboratory
27. Construction Technology
    English Department
    Humanities
    Landscape Technology
    Library
    Mathematics Department
28. Chemistry Laboretories
    Machine Laboratories
    Materials Testing
    Mechanicel Technology
    Metallurgical Laboratory
29. Garage
31. Gate House (Federal Street)
32. Heat and Power Technology
33. Gate House (Byers and State Street)
35. Physics Laboratories

S.T.C.C. CAMPUS


SPRINGFIELD HOUSE
MUSEUM OF SCIENCE
MUSEUM OF FINE ARTS
PUBLIC LIBRARY
CONSERVATORY OF MUSIC
ATHLETIC FIELD
STCC CAMPUS
91
20
NORTH
SPRINGFIELD



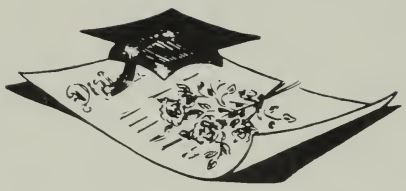
New Master Plan for Springfield Technical Community College Expansion

The following buildings (numbered) are already located on the local campus:

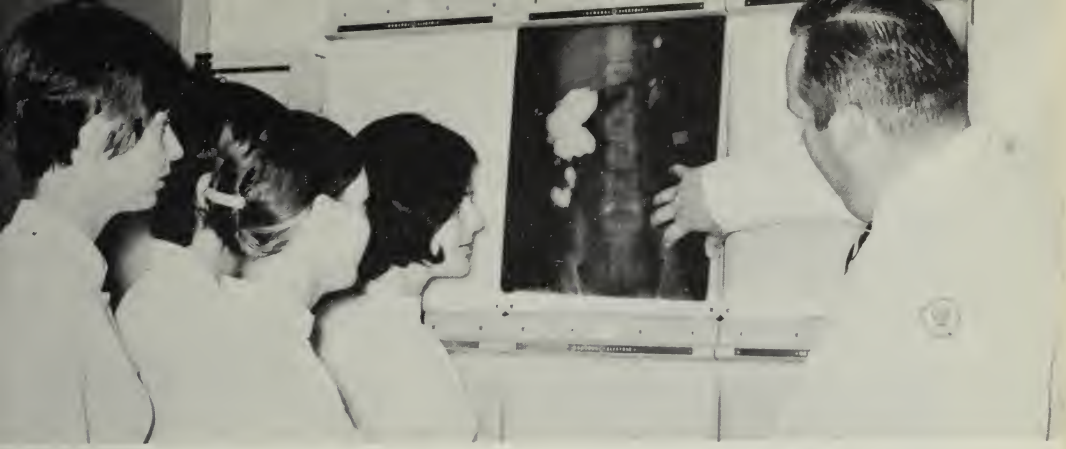
1. Sciences
2-3-4. Humanities
5. Health Sciences
6. Automotive Technology
7. Administration
8. Offices
9. Graphic Arts
10. Faculty

The eight new buildings which when completed will enable the college to enroll 5,000 students in 1975 are identified on the above drawing as follows:

11. Physical Education
12. Engineering - Sciences
13. Humanities
14. Auditorium
15. Sciences
16. Educational Resources
17. Sciences
18. Student Union



Commencement Excercise '70



RADIOLOGIC TECHNOLOGY

The Radiologic Technologist is a most important member of the Radiology team in that he produces films of examinations requested by the physician for interpretation by the radiologist. This entails the taking of radiographs in the operating rooms and at the bedside, as well as in the X-ray Department.

The technician also assists the radiologist in fluoroscopic examinations, the end results of which may be recorded cinematographically or on video tape as well as conventional x-ray film. It is a challenging position capable of giving great personal satisfaction as well as good financial potential.

There are more vacancies in the field than there are students being trained. X-ray film companies and x-ray equipment companies often recruit their representatives from the field of X-ray Technology.

Graduates are eligible to take the American Registry of Radiologic Technologists certification examination. Those who qualify may indicate certification by placing the letters R.T. after names.

The Radiologic Technology program is affiliated with Wesson Memorial Hospital and the Springfield Hospital Medical Center.

RADIOLOGIC TECHNOLOGY

Summer Special

No.	Course Title*	Class	Lab	Prep	Units	Credit
6207	Orientation and Professional Ethics					2
6208	Fundamentals of Radiologic Technology					4
						6

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
2084	Mathematics of Radiology	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
5037	Medical Terminology	2		4	6	2
6166	Radiologic Technology 1	3	3	6	12	4
		14	6	28	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
4086	General Psychology	3		6	9	3
3092	Anatomy and Physiology 2	3	3	6	12	4
3082	Introductory Physics	2		4	6	2
6167	Radiologic Technology 2	3	3	6	12	4
		14	6	28	48	16

Summer Special

No.	Course Title*	Class	Lab	Prep	Units	Credit
6209	Principles of Radiologic Technology					2
6210	Application of Radiologic Technology					4
						6

Semester 3

No.	Course Title*	Class	Lab	Prep	Units	Credit
4008	Introduction to Sociology 1	3		6	9	3
	Humanities Elective	3		6	9	3
6170	Radiologic Photography	2		4	2	2
3083	Radiologic Physics 1	3	3	6	12	4
6168	Radiologic Technology 3	3	3	6	12	4
		14	6	28	44	16

Semester 4

No.	Course Title*	Class	Lab	Prep	Units	Credit
4009	Introduction to Sociology 2	3		6	9	3
	Humanities Elective	3		6	9	3
3084	Radiologic Physics 2	3	3	6	12	4
6169	Radiologic Technology 4	3	9	6	18	6
		12	12	24	48	16

*All courses required for graduation

Certificate Programs

- Dental Assistant
- Medical Assistant
- Medical Laboratory Assistant (CLA)
- Operating Room Technician
- Cosmetology

DENTAL ASSISTANT

The Dental Assistant course prepares students to work as assistants in dental offices or clinics. Laboratory training is conducted in the college dental clinic under the direction of two dentists and two dental hygienists.

The dental assistant is responsible for developing and maintaining the effectiveness of dental office routines. Training covers techniques of chairside assisting with knowledge of dental materials and instrument readiness, intermediate laboratory procedures, operative X-ray technology, knowledge of dental office systems, and business procedures.

This course is approved by and conforms to the curriculum prescribed by the Council on Dental Education of the AMERICAN DENTAL ASSOCIATION and the AMERICAN DENTAL ASSISTANTS' ASSOCIATION. Graduates are eligible to take the ADAA certification examination.

DENTAL ASSISTANT

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
7079	Professional Relations and Administration	2		4	6	2
7025	Dental Sciences 1	3	3	6	12	4
5008	Typewriting 1	2	3	4	9	3
7023	Dental Assistants Techniques 1	2	6	4	12	4
		12	12	24	48	16

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
4072	Human Relations at Work 2	2		4	4	2
5005	Medical/Dental Records	2		4	6	2
7026	Dental Sciences 2	2		4	6	2
7024	Dental Assistants Techniques 2	3	10	6	19	6
7065	Supervised Clinical Experience 411		15		15	4
		9	25	18	52	16

*All courses required for graduation

MEDICAL ASSISTANT

The two-year program prepares students to meet the rigorous demands of today's practicing physician and his need for a skilled Medical Assistant to handle the increasing administrative and technical details of his medical practice. General education and technical studies prepare the Medical Assistant to perform at various levels of career interest, knowledge, and skills.

An opportunity for a unit of supervised clinical experience in cooperating health agencies is provided during the fourth semester.

Graduates are qualified to accept positions in medical offices, hospitals, or other community health service agencies.

For students seeking a job entry career, the option for a one-year certificate program will provide an opportunity for placement in medical settings requiring knowlege of routine office procedures.

MEDICAL ASSISTANT

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
7002	Foundations of Health Services	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
7027	Medical Assistant Techniques 1	3	3	6	12	4
5008	Typewriting 1	2	3	4	9	3
		14	9	28	51	17

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
1005	English Composition 2	3		6	9	3
3092	Anatomy and Physiology 2	3	3	6	12	4
7028	Medical Assistant Techniques 2	3	6	9	18	5
5009	Typewriting 2	2	3	4	9	3
5005	Medical/Dental Records	2		4	6	2
		13	12	29	54	17

MEDICAL LABORATORY ASSISTANT (CLA)

Advances in modern laboratory medicine have resulted in an ever increasing demand for qualified supportive personnel to assist in the performance of vital diagnostic tests. Under the supervision of a medical technologist (ASCP) or pathologist, the Medical Laboratory Assistant collects blood samples, analyzes the chemical components of body fluids, may prepare and stain tissues, and performs routine laboratory tests such as urinalysis and blood counts. Supervised clinical experience is assigned in cooperation with affiliating hospitals.

Graduates are eligible to take the National Certified Laboratory Assistant Examination. Those who qualify may indicate certification by placing the letters CLA after names.

This program is accredited by the Board of Certified Laboratory Assistants of the American Society of Clinical Patholigists and has been endorsed by the Council on Medical Education of the American Medical Association.

MEDICAL LABORATORY ASSISTANT (CLA)

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1007	Fundamentals of Speech	3		6	9	3
3091	Anatomy and Physiology 1	3	3	6	12	4
7031	Introductory Clinical Lab	4	9	8	20	6
7032	Hematology and Serology	3	10	6	17	5
		13	22	26	58	18

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
3092	Anatomy and Physiology 2	3	3	6	12	4
7033	Clinical Chemistry	4	8	8	20	6
7034	Blood Bank and Coagulation	4	8	8	20	6
		11	19	22	52	16

Summer Special

No.	Course Title*
7035	Clinical Lab Practicum

*All courses required for graduation

OPERATING ROOM TECHNICIAN

The operating room technician has rapidly become an essential and accepted member of an operating room team. The program prepares the technician to function as a member of a surgical team or as an assistant to the surgeon, anesthesiologist, or professional nurse in the operating room. The program combines theory and practice of surgical asepsis in the operating room, delivery room, emergency room, and central service department. It is designed to develop knowledge and skill in maintaining aseptic techniques within the hospital area.

OPERATING ROOM TECHNICIAN

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
1004	English Composition 1	3		6	9	3
7002	Foundations of Health Services	3		6	9	3
3093	Human Anatomy	3		6	9	3
3028	Microbiology	3	3	6	12	4
7007	Foundations of ORT 1	2	8	4	14	4
		14	11	28	53	17

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
4072	Human Relations at Work 2	2		4	6	2
7008	OR Techniques and Procedures 2	3		6	9	3
7063	Supervised Clinical Experience 471	1	12	2	15	5
7064	Supervised Clinical Experience 472	1	12	2	15	5
		7	24	14	45	15

*All courses required for graduation

COSMETOLOGY

The art and science of Cosmetology has received tremendous impetus in recent years. It is an occupational field that promises continued growth, new skills, and many career advantages for both men and women.

The Cosmetology course is based on 1000 hours of instruction required for licensure by the Massachusetts Board of Registration in Hairdressing.

COSMETOLOGY

Semester 1

No.	Course Title*	Class	Lab	Prep	Units	Credit
5028	Business Management	2		4	6	2
7061	Anatomy and Physiology 401	3		6	9	3
7004	Sterilization/Sanitation	1		2	3	1
7059	Visual Poise and Charm	1		2	3	1
7045	Manicuring 1		2		2	1
7053	Hair Coloring		6		6	3
7050	Cold Waving		8		8	4
7043	Scalp Treatment 1		2		2	1
7052	Hair Shaping		2		2	1
7051	Basic Styling Techniques		4		4	2
7047	Facial/Make-up		2		2	1
7056	Shampoo/Rinses		2		2	1
		7	28	14	49	21

Semester 2

No.	Course Title*	Class	Lab	Prep	Units	Credit
4071	Human Relations at Work 1	1		2	3	1
7048	Rudiments of Cosmetic Dermatology	2		4	6	2
7005	Light Therapy	1		2	3	1
7046	Manicuring 2		2		2	1
7054	High Fashion Toning		8		8	4
7049	Curl Control Techniques		8		8	4
7044	Scalp Treatment 2		2		2	1
7057	Style Shaping		2		2	1
7055	Artistic Hair Styling		2		2	1
7058	Therapeutic Facials/Contour Make-up		2		2	1
7060	Wig Styling		2		2	1
		4	28	8	40	18

*All courses required for graduation

A VISITATION BY THE MEMBERS
of the
MASSACHUSETTS BOARD OF REGIONAL
COMMUNITY COLLEGES

LANGUAGES

— 1000 SERIES —

1001 - English

General development program for building English skills.

No credit

1002 - English

General development program for building English skills. PREREQUISITE: 1001.

No credit

1004 - English Composition 1

The mechanics of writing, of functional grammar, and of documentary techniques. Weekly composition of expository and argumentative themes, supplemented by illustrative readings. Study of the short story and the writing of critical and analytical themes.

3 semester hours

1005 - English Composition 2

A continuation of the work of English 1004. Study of other literary forms: fiction, poetry, and drama. Weekly composition of critical and analytical themes. Research paper. PREREQUISITE: 1004

3 semester hours

1006 - Business English

This course is designed to teach students the fundamentals of standard business, medical, and technical correspondence. Also included are the fundamentals of report writing and the techniques of analysis of the writing situation. Emphasis is placed on the factors which the writer must consider, the processes necessary for effective business correspondence, and the preparation of medical, legal, and technical reports.

3 semester hours

1007 - Fundamentals of Speech

An introductory course designed to assist the student to improve in oral communication skills. Speech assignments are designed to acquaint the student with the importance of organization, the principle of clarity, and the tools of interest and persuasion.

3 semester hours

1008 - Technical Report Writing

The instruction has been organized to emphasize methods and centers on the writing process. Special emphasis has been placed on the factors which the report writer must consider and the processes he must follow in writing a report. The student learns the techniques of analysis of the writing situation, methods of investigation of the problem, the functional organization of the report itself, and the writing of the report to the preparation of the final copy.

3 semester hours

1009 - World Literature 1

A survey of the outstanding literature of the Western World from Homer to the Renaissance.

3 semester hours

1010 - World Literature 2

A continuation of World Literature 1, extending from the Renaissance to modern literature. PREREQUISITE: 1009.

3 semester hours

1012 - English Literature

A survey of major British writers dealing with the major trends in English literature from Chaucer through T.S. Eliot and stressing the history and development of English literature.

3 semester hours

1013 - American Literature

A study of selected major writers from Emerson to the present with intensive analyses of Thoreau's "Walden," Twain's "Huckleberry Finn," Whitman's poems, at least one modern novel, and the works of several modern poets.

3 semester hours

1014 - Library Science 1

An introduction to the history of libraries and to the place of the library in American society. A survey of the different types of libraries: public, special, governmental, school, and college; the importance of inter-library cooperation, regional centers and automation; history of books and printing; opportunities in the field of library work.

3 semester hours

1015 - Library Science 2

A study of the basic tools and methods of locating information in a library: the card catalog, indexes, encyclopedias, dictionaries, atlases, vertical files, government documents, and important reference books.

3 semester hours

JOURNALISM

1016 - Introduction to Journalism

An introductory course designed to explore the overall area of journalism. Dealt with will be the mass communication system as it exists today, historical background, the newspaper, and other publication forms.

3 semester hours

1017 - Principles of Journalism

An extension of Introduction to Journalism, 1016, dealing in more fundamental depth with the history and ethics of the industry, the responsibilities of the press and its effect upon the public. Also provided will be direct experience in various publication forms.

3 semester hours

FOREIGN LANGUAGE

1084 - Elementary French 1

A basic course designed primarily for students who have had no previous experience with the language. The course will include intensive drill in pronunciation, elementary conversation, reading, grammar, and writing. French will be used as much as it is practical. Language lab required.

3 semester hours

1085 - Elementary French 2

A continuation of Elementary French 1. Language lab required. PREREQUISITE: 1084.

3 semester hours

1086 - Intermediate French 1

A review and continuation of the basic course aimed at giving the student control of the basic structures of the French language. In addition, an introduction to French Literature will be made through the study of selected writers. Language lab required. PREREQUISITE: 2 units of French at entrance or French 1084, 1085.

3 semester hours

1087 - Intermediate French 2

A continuation of Intermediate French 1. Language lab required. PREREQUISITE: 2 units of French at entrance or French 1084, 1085, and 1086.

3 semester hours

1088 - Elementary German 1

An elementary course for students who have had no previous experience with the language. Formal grammar, drill in pronunciation, oral and written composition are required. No credit will be given unless a full year's work is completed. Language lab required.

3 semester hours

1089 - Elementary German 2

A continuation of German 1. Language lab required. PREREQUISITE: 1088.

3 semester hours

1090 - Intermediate German 1

Review of elementary grammar; continued practice in oral and written composition; the reading and discussion of selected short stories, plays, and one longer work; reports on outside reading. Language lab required. PREREQUISITE: 2 units of German at entrance or 1088, 1089.

3 semester hours

1091 - Intermediate German 2

A continuation of German 1. Language lab required. PREREQUISITE: 2 units of German at entrance or German 1088, 1089, and 1090.

3 semester hours

1092 - Elementary Italian 1

This course will include a presentation of elementary Italian grammar, drill in pronunciation, practice in conversation, and the reading of simple texts.

3 semester hours

1093 - Elementary Italian 2

A continuation of Elementary Italian 1. PREREQUISITE: 1092.

3 semester hours

1094 - Intermediate Italian 1

A continuation of Elementary Italian 1 and 2 with more emphasis on conversation and pronunciation. An introduction to Italian Literature and Civilization through reading of excerpts from leading authors. PREREQUISITE: 1092, 1093 or permission of the instructor.

3 semester hours

1095 - Intermediate Italian 2

A continuation of Intermediate Italian 1. PREREQUISITE: 1092, 1093 or permission of the instructor and 1094.

3 semester hours

1096 - Elementary Spanish 1

This course includes phonetics, grammar, oral drill, and the reading of Spanish prose of elementary level. Language lab required.

3 semester hours

1097 - Elementary Spanish 2

A continuation of Elementary Spanish 1. Language lab required. PREREQUISITE: 1096.

3 semester hours

1098 - Intermediate Spanish 1

A review of grammar will be given in this course; oral drill and conversation will also receive attention. The reading will be as extensive as time permits. Language lab required. PREREQUISITE: 2 units of Spanish at entrance and the passing of a placement examination given by the Modern Language Department, or Spanish 1096, 1097.

3 semester hours

1099 - Intermediate Spanish 2

A continuation of Intermediate Spanish 1. Language lab required. PREREQUISITE: 2 units of Spanish at entrance and the passing of a placement examination given by the Modern Language Department or 1096, 1097, and 1098.

3 semester hours

2003 - Introductory Mathematics 1

A study of the real number system with emphasis on rational numbers. Problems in decimals, ratios, and percentages and their application to business procedures are stressed. Negative numbers, simple sentences and geometric applications provide a background for Introductory Mathematics 2. PREREQUISITE: None.

3 semester hours

2004 - Introductory Mathematics 2

Signed numbers, operations with algebraic expressions, linear equations and systems of linear equations, factoring, roots and radicals, trigonometry of the right triangle, basic slide rule, graphs and quadratic equations. PREREQUISITES: 2003 or one year of high school algebra.

3 semester hours

2005 - Mathematics 11

A review of fundamental algebraic concepts and operations, functions, graphs, linear equations, and determinants, quadratic equations, systems of equations and theory of equations, exponents and radicals, logarithms, slide rule, trigonometric functions, vectors and triangles, and the J-operator. PREREQUISITE: two years of high school algebra or 2004.

4 semester hours

2006 - Mathematics 12

Inequalities, variations, progressions, properties of trigonometric functions, elements of analytic geometry, derivatives and applications, integration, and applications. PREREQUISITE: 2005.

4 semester hours

2007 - Mathematics 13

Review of elementary differentiation and integration, differentiation of transcendental functions, methods of integration, expansion of functions in series (Fourier Series), and differential equations. PREREQUISITE: 2006.

4 semester hours

2008 - Mathematics 15

Topics included are: fundamental concepts and operations, functions and graphs, the trigonometric functions, solution of linear equations, factors and factoring, quadratic equations, ratio, proportion and percentage, interest, discounts, multiple discounts, business statistics, and basic slide-rule operations. PREREQUISITE: None. Restricted to Landscape and Graphic Arts students.

4 semester hours

2009 - Mathematics 16 Computer Logic

A course dealing with the special processes of "reasoning" that can be performed by mechanical, electromechanical, and electronic devices. It introduces the student to the terminology of classical logic, Boolean algebra, and binary arithmetic. PREREQUISITE: 2006.

3 semester hours

2010 - Mathematics 17

A review of fundamental concepts of arithmetic and algebra. Manipulation of rational numbers, exponents, logarithms, and slide rule operation. Problems in decimals, ratio and percentages stressing their chemical, biological, and medical applications. Factoring and linear equations.

3 semester hours

2011 - Mathematics 21

Introduction to analytical geometry and to the differential and integral calculus of algebraic functions. The straight line, conic sections, vectors, inequalities, functions and graphs, maximum and minimum theory, definite and indefinite integral areas are studied.

6 semester hours

2012 - Mathematics 22

Differentiation and integration of logarithmic, exponential and hyperbolic functions, theory of limits and continuity, formal methods of integration, parametric equations and polar coordinates, vector algebra and differentiation, moments and centroids.

4 semester hours

2013 - Mathematics 23

Solid analytic geometry and vectors, infinite series including Taylor's Theorem, partial derivations, gradient, total differential, line integrals, multiple integration, linear algebra, vector spaces, and vector products.

4 semester hours

2014 - Mathematics 24

Topics in differential equations, vector and tensor analysis, infinite series, transformations, and special functions.

4 semester hours

2015 - Statistics and Quality Control

An introduction to basic statistics. The course includes construction and use of control charts, the use of sampling plans, and related topics. The organization of a quality control department is considered with emphasis on the functions of its components. PREREQUISITE: 2005.

3 semester hours

2016 - Statistics

This course provides the student with a knowledge of elementary statistical theory and techniques. General topics include data collection methods, analysis methods, and interpretation. Other topics of discussion are the basic concept of variability, measures of variability and central tendency, normal distributions of data and tests of significance, and interval estimates for the mean and variance.

3 semester hours

2080 - Finite Mathematics 1

Basic set theory, number systems, and equations. A study of elementary functions, using algebra and analytic geometry. PREREQUISITE: 2004 or two years of high school algebra.

3 semester hours

2081 - Finite Mathematics 2

Probabilities, vectors, matrices, and linear programming. PREREQUISITE: 2080.

3 semester hours

2082 - Analytic Geometry and Calculus 1

Introduction to analytic geometry, functions, limits, and derivatives. Differentiation of algebraic functions. PREREQUISITE: 2004 or 2 years of high school algebra.

3 semester hours

2083 - Analytic Geometry and Calculus 2

A continuation of Analytic Geometry and Calculus 1. PREREQUISITE: 2082.

3 semester hours

2084 - Mathematics of Radiology

The student is acquainted with the concepts which are needed for a thorough grasp of the material presented in Radiologic Physics 1 and 2. The course includes numbers, decimals, fractions, ratios, trigonometry, logarithms, and the use of the slide rule.

3 semester hours

2085 - Elementary Functions

An introduction to the study of calculus developed through the investigation of a number of elementary functions.

3 semester hours

SCIENCE

— 3000 SERIES —

3002 - Chemistry 1

A study of the fundamental principles of chemistry. Descriptive chemistry is included to introduce the subject as an empirical laboratory science. A primary aim of the course is to develop some understanding of nuclear, atomic, molecular, and solid state structure in preparation for subsequent courses in Material Science.

4 semester hours

3003 - Chemistry 361

Topics in chemistry relating to the graphic arts including photography and photographic processes, colors, inks, and printing.

4 semester hours

3004 - Chemistry 20

The concepts of chemistry, the chemistry of carbon compounds, and applied biological chemistry.

4 semester hours

3005 - General Chemistry 21

An introductory course in general chemistry designed to parallel first year chemistry courses offered in university science and engineering programs. Modern theories of chemical reactions, chemical bonding, and atomic molecular structure are emphasized.

4 semester hours

3006 - General Chemistry 22

A continuation of General Chemistry 21, which is a prerequisite.

4 semester hours

3008 - Fuel Oil Chemistry

A study of heating oils and gases and their combustion. Topics covered include petroleum production, preparation of fuel oils and gases, chemistry of fuels, and atmospheric pollution. The laboratory work is primarily concerned with the physical and chemical testing of fuels and the determination of combustion products.

4 semester hours

3009 - Automotive Chemistry

A study of specialized topics which are of particular interest in automotive technology. It covers petroleum and how it is refined, gasoline, diesel fuel, gaseous fuels, atmospheric pollution, lubrication and lubricants, the chemistry of batteries, corrosion, hydraulic fluids, and antifreeze compounds. The laboratory work consists of selected topics which help to clarify the classroom assignments.

4 semester hours

3010 - Physical Science 1

Fundamental principles of physical science: force, motion, and energy; facts, theories and laws; the scientific method; the conservation of energy, the gas laws, and the beginning of chemistry.

4 semester hours

3011 - Physical Science 2

Chemical reactions and equations, the periodic table; electricity, magnetism and electromagnetic radiation; atomic structure, the origin of light, electronic configuration and chemical bonding; solution chemistry and carbon chemistry; the earth's crust, fundamental geological processes, and radioactivity.

4 semester hours

3012 - Physics 1

A study of mechanics, properties of matter, wave motion, heat, and sound. Lectures, demonstrations, problem assignments, and laboratory work are given in the following fields: systems of measurement, accelerated motion, momentum, moment of inertia, resolution and composition of forces, elasticity and properties of matter, pneumatics and hydrostatics, machines and energy, harmonic motion and wave motion, heat energy and heat transfer, thermal properties, thermodynamics, and heat engines.

4 semester hours

3013 - Physics 2

A study of magnetism, electricity, and light. Lectures, demonstrations, problem assignments, and laboratory work are carried on in the following fields: electrostatics, magnetism, resistance of conductors, Ohm's law, thermoelectricity, electrochemistry, electromagnetic induction, radio, illumination, mirrors, lenses, optical instruments, radiant energy, spectroscopy, polarization, and recent discoveries in physics.

4 semester hours

3014 - Physics 14

Physics of solutions and gases, electricity, and principles of hypo- and hyperthermia.

4 semester hours

3015 - Physics 21

Elementary mechanics, statics, and dynamics; conservation of energy and momentum; conservation of angular momentum, heat and simple harmonic motion.

5 semester hours

3016 - Physics 22

A continuation of Physics 21 covering sound, light, electricity, and magnetism; Gauss, Ampere, and Faraday's Laws; electric and electromagnetic properties of materials; magnetic and electric circuits.

5 semester hours

3017 - Physics 23

Electromagnetic waves, Maxwell's equations, introduction to relativity, atomic, nuclear, and particle physics.

5 semester hours

3018 - Physics 24

Introduction to relativity, atomic, nuclear, and particle physics.

4 semester hours

3019 - Thermodynamics 1

Designed to acquaint the student with an understanding of the fundamental thermodynamic properties and relationships involved in all heat devices. The topics included are: energy, energy relations, the ideal gas, and the processes with application to ideal gases. PRE-REQUISITE: 2003.

3 semester hours

3020 - Thermodynamics 2

Completes the study of the fundamental thermodynamic properties and covers the description, classification, and analysis of steam power cycles. The topics included are: cycle analysis and reversible cycles, entropy and the second low, power from steam, the generation of power, and cycles for modern steam plants. PREREQUISITE: 3019.

3 semester hours

3021 - Botany 1

Provides an understanding of the makeup of plant materials, stressing structure, physiology, and reproduction. Consideration is given to ecology and how it affects the use of plants in the landscape.

4 semester hours

3022 - Botany 2

Considers both the natural and introduced trees that are useful for landscape work in the New England area. Representative trees are studied in detail, stressing identification and analysis.

3 semester hours

3023 - Botany 3

A continuation of Botany 2, covering the study and identification of native and introduced shrubs and vines. Emphasis is placed on the best use of the types discussed. Laboratory sessions are devoted to the identification of specific types.

3 semester hours

3024 - Botany 4

The study and identification of lawn grasses which are most suited to the New England area. The best uses of grasses, seeds, and

cultural practices to promote growth under adverse conditions are studied. Laboratory work deals with identification of grasses, planting and growing procedures, and weed and pest control.

3 semester hours

3025 - Entomology

Acquaints the student with the more common insects and diseases as encountered in landscape and nursery work.

2 semester hours

3028 - Microbiology

A basic study of microorganisms, their activities, destruction, and control. The concepts of infection, immunity, and hypersensitivity precede the survey of the microbiology of major infectious diseases.

4 semester hours

3031 - Physics 11

An introductory course covering fundamental concepts of mechanics, heat, and sound. Laboratory.

4 semester hours

3032 - Physics 12

A continuation of Physics 3031, which is a prerequisite. Laboratory.

4 semester hours

3080 - Biology 1

Scans the broad scope of life from microorganisms to man,

stressing the basic unity of life. It includes discussions on cell and tissue structure and their relationship to the molecular basis of life with an emphasis on cellular metabolism.

4 semester hours

3081 - Biology 2

General physiologic and morphologic attributes of plants and vertebrate and invertebrate animals are discussed with emphasis on the human organ system. The principles of heredity, population genetics, evolution, and ecology are dealt with in light of present day theories. PREREQUISITE: 3080.

4 semester hours

3082 - Introduction to Physics

This course presents in a largely qualitative fashion the basic ideas which will be built upon in Radiologic Physics 1 and 2. It includes the history of physics, discussions of matter, atomic structure, the periodic system, electricity and magnetism, induction, motors, and generators.

2 semester hours

3083 - Radiologic Physics 1

This course begins an intensive quantitative discussion of the physical principles of radiology. Physical units, work, force and energy, elementary circuits analysis, measuring devices, transformers, demionic devices, x-ray circuits, and x-ray generation, nature and spectra are treated in the lecture and demonstrated in the laboratory.

4 semester hours

3084 - Radiologic Physics 2

A continuation of Radiologic Physics 1. The course includes image quality, screens and grids, interactions of radiation and matter,

protection and health physics, electronics associated with radiology, such as image intensification systems and video tape systems. The course finishes with a discussion of physics, mathematics, and instrumentation of nuclear medicine and internal dosimetry of radionuclides.

4 semester hours

3086 - Chemistry 11

An introduction to the chemical properties of matter, chemical structure, and inorganic chemistry. The laboratory work investigates both physical and chemical principles and also introduces the student to analytical procedures. PREREQUISITE: one year algebra plus chemistry or physics.

4 semester hours

3087 - Chemistry 12

A study of the properties, structure, nomenclature, and reactions of hydrocarbons plus an introduction to biochemistry. Both testing and synthesis of typical organic compounds will be performed in the laboratory. PREREQUISITE: 3086.

4 semester hours

3088 - Environmental Microbiology

A general investigation of microbial structure, growth and physiology, and the reactions of microorganisms to their physical and chemical environment. PREREQUISITE: 3087, 3002, or 3005.

3 semester hours

3089 - Chemistry of Liquid Wastes

An investigation of the chemistry of community and industrial liquid wastes and of the test procedures required to assure that treatment processes are operating properly. It includes such topics as color, turbidity, pH, alkalinity, hardness, mineral content, and bacterial content. PREREQUISITE: 3087.

4 semester hours

3091 - Anatomy and Physiology 1

A comprehensive study of the structure and function of the human body, emphasizing the normal, which will serve as a background for the application of scientific principles both in everyday living and in the work of the various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens. Units covered are concerned with general introductory material, the skeleton, muscles, and the nervous system.

4 semester hours

3092 - Anatomy and Physiology 2

A continuation of Anatomy and Physiology 1 concentrating on body metabolism, reproduction, and endocrine control. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking, and overview of the body as a whole.

4 semester hours

3093 - Human Anatomy

A basic study of the structure of the human body emphasizing the interrelationship of the systems.

3 semester hours

3094 - Environmental Pollution

An investigation of the sources of air and water pollution and their effect on man and his environment. It includes a study of air and water quality standards plus an overview of applicable control procedures. PREREQUISITE: 3087, 3002, or 3005.

3 semester hours

3095 - Water Sampling and Analysis

A study of the techniques and equipment involved in obtaining samples of liquid pollutants and an analysis of materials by instrumental methods. It includes such topics as adsorption, extraction, colorimetry, spectrophotometry, chromatography, and electrometric determinations. PREREQUISITES: 3087, 2005.

4 semester hours

4008 - Introduction to Sociology 1

An introductory course designed to acquaint the student with a working knowledge of the concepts used by sociologists and with the well-established generalizations in the field. Topics include such factors as socialization, primary groups, stratification, population, mobility, and its effects.

3 semester hours

4009 - Introduction to Sociology 2

A continuation of the application of sociological concepts and principles to selected aspects of contemporary society, especially the basic social institutions and cultural patterns. PREREQUISITE: 4008.

3 semester hours

4012 - History of Western Civilization 1

Origin and development of Western Civilization beginning with the classical civilizations of the ancient world and dealing with the contributions of each major historical group until the emergence of modern Europe in the Commercial Revolution of the Sixteenth Century. The emphases are upon the social, economic, and cultural trends of each period.

3 semester hours

4013 - History of Western Civilization 2

The evolution of modern Western Civilization since the Commercial Revolution of the Sixteenth Century. This semester covers

the period of colonization, the Industrial Revolution, and the emergence of modern national states extending to the present. The emphases are upon social, economic, and cultural developments. PREREQUISITE: 4012.

3 semester hours

4014 - Introduction to Economics 1

An introductory course to provide students with a general, basic knowledge and understanding of the structure and function of the American economy in preparation for intelligent citizenship.

3 semester hours

4015 - Introduction to Economics 2

A study and analysis of the major contemporary social, economic, and political problems of modern society. Emphasis will be placed on developing an analytical approach and understanding of problems related to the community and our total American economic system. PREREQUISITE: 4014.

3 semester hours

4071, 4072, 4073 - Human Relations at Work

A very basic, introductory course designed to emphasize some of the psychological principles that directly affect persons in the world of work, and the means by which they may be applied to practice in specific technological areas.

1, 2, and 3 semester hours

4081 - History of the United States 1

History of the United States beginning with our European background and dealing with the development of the American nation until the end of the Civil War in 1865. The social, economic, and institutional aspects are emphasized.

3 semester hours

4082 - History of the United States 2

History of the United States from the Reconstruction Period until the present. The course covers the political, social, economic, and institutional developments of the American people into a great world power.

3 semester hours

4083 - Introduction to Political Science

An introductory course to provide students with a general understanding of the basic phenomena of political systems and governmental policy formation, organization, and general administration.

3 semester hours

4085 - Child and Developmental Psychology

An introductory course which presents some of the cardinal biological, psychological, and sociological factors underlying human behavior at different major stages of development through adolescence.

3 semester hours

4086 - General Psychology

An introductory course designed to provide students with a general knowledge of the concepts and methods of psychology. Topics considered include the development of behavior, sensation, learning, motivation, intelligence, attitudes, and personality.

3 semester hours

4087 - Principles of Normal and Abnormal Behavior

A general introduction into the origin, development, degrees of mental disorganization, and the methods of coping with psycho-

logical dysfunction. Inquiry will also be made into the theoretical and applied approaches of several of the major schools of thought with regard to helping services. PREREQUISITE: 4086.

3 semester hours

4089 - Introduction to Philosophy

A survey of selected basic issues and major types of philosophy, their sources in experience, the sciences, history, and both classic and contemporary philosophers.

3 semester hours

4091 - The Black Experience in Contemporary American Society 1

This course will focus upon the role of the Afro-American experience in history. Among the topics discussed will be the following: view of the African way of life, attitudes toward the Afro-American, slave trade, colonial enslavement and its many facets, the black man in the American Revolution, antebellum slave system, and the black man in American society. Additional focus will be upon the black contributions in science, history, religion, and sports. Focus will also be upon the Civil War and black reconstruction as well as analyses, problems, and contributions of Afro-Americans in contemporary society.

3 semester hours

4092 - Psychology of Human Adjustment and Personal Effectiveness

An introductory course which explores the means by which a person manages himself and learns to cope with some of the multiple drives, demands, and pressures encountered in human living. The contributions of major theorists such as Erikson, Freud, Fromm, Rogers, and Sullivan will be considered. Lectures, textbooks, collateral reading, verbal and written reports. PREREQUISITE: 4086.

3 semester hours

4093 - Industrial Psychology

The application of basic psychological principles to human problems in industry. Major areas of emphasis will include worker motivation, individual differences, personnel problems, selection and training, job satisfaction, employee attitudes and incentives, industrial mental health, human relations factors, and psychological tests used in industry. PREREQUISITE: 4073 or 4086.

3 semester hours

4094 - The Black Experience in Contemporary American Society 2

A continuation of 4091. PREREQUISITE: 4091.

3 semester hours

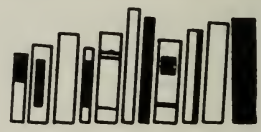
4095 - Current Issues Influencing Black Americans

The course will seek to examine, interpret, and project current issues affecting Black Americans. Some of the areas to be considered are the following: police-community relations, unemployment, inadequate housing and education, the administration of justice, consumer credit practices, Black Capitalism and Black Power, population in Urban Centers and attitudes projected by the mass media about minority groups. Consideration will also be given to attitudes about war, pollution, and the welfare system, in addition to issues which arise during the presentation of this course.

3 semester hours

BUSINESS

— 5000 SERIES —



5005 - Medical Records

A general course based on the understanding and importance of keeping accurate medical and financial records. Basic mathematical skills are reviewed and developed for practical application in a medical office. Included are procedures in banking, billing, insurance and tax forms, and all types of financial transactions. In addition, students are oriented to all types of consulting services and referral agencies available in the community.

3 semester hours

5008 - Typewriting 1

Mastery of keyboard techniques and general operation of the various machines. Net speed of at least 40 words per minute with accuracy.

3 semester hours

5009 - Typewriting 2

For students who have met the standards of Typewriting 1. Further development of accuracy and speed to at least 50 words per minute. The development of skill in the production of the common business communication forms.

3 semester hours

5010 - Executive Typewriting 1

This course requires a high degree of concentrated effort on production typing. Stress is placed on the typing of business, legal,

and medical forms. Problem solving with accuracy, speed and trustworthiness, in each case, is of the utmost importance.

3 semester hours

5011 - Advanced Typewriting 2

A continuation of Executive Typewriting 1.

3 semester hours

5012 - Medical Typewriting 1

This course requires a high degree of concentrated effort on the nomenclature pertaining to this special technology. Stress is placed on the typing of forms and on problem solving with absolute accuracy, speed, and trustworthiness in production work.

3 semester hours

5013 - Medical Typewriting 2

A continuation of Medical Typewriting 1.

3 semester hours

5014 - Legal Typewriting 1

This course requires a high degree of concentrated effort on the nomenclature pertaining to this special technology. Stress is placed on the typing of forms and on problem solving with absolute accuracy, speed, and trustworthiness in production work.

3 semester hours

5015 - Legal Typewriting 2

A continuation of Legal Typewriting 1.

3 semester hours

5016 - Executive Secretarial Practice 1

Instruction and practice of a variety of secretarial skills, including receptionist duties, telephone techniques, filing procedures, and handling of confidential matters, conferences, itineraries, and interviews.

3 semester hours

5017 - Executive Secretarial Practice 2

Instruction and practice in the operation of duplicating equipment, copying machines, calculators, adding machines, I B M executive typewriters, postage meter, and other appliances used in the modern office. An introduction to the basic data processing cycle and current systems, methods, and equipment used for rapid handling of business data.

3 semester hours

5018 - Shorthand 1

The mastery of the theory of College Gregg Shorthand, Diamond Jubilee Series, with emphasis on penmanship, vocabulary, spelling, and punctuation. The development of dictation speed of at least 60 words per minute on familiar materials.

3 semester hours

5019 - Shorthand 2

Continued review of College Gregg Shorthand theory with further emphasis on vocabulary, spelling, and punctuation. The development of speed to at least 80 words per minute on unfamiliar materials.

3 semester hours

5020 - Shorthand 3

This course stresses the importance of secretarial work and prepares the college student for some of the decision-making aspects of

the job. The course covers dictation and transcription materials in four specialized areas: medical, legal, technical, and international.

3 semester hours

5021 - Medical Dictation and Transcription

This is a comprehensive medical shorthand, skill-building course with emphasis on medical terminology and transcription competency in working with medical correspondence and professional records.

6 semester hours

5022 - Secretarial Accounting 1

Instruction and practice in the fundamental principles of professional accounting covering daily record keeping; the theory of debits and credits; classification of accounts; journalizing; preparation of financial statements; use of the trial balance; and technical procedures involved in closing the operating accounts of a single proprietorship in a service and retail type of business.

3 semester hours

5023 - Accounting 1

The basic structure of modern accounting is covered. Accounting concepts and general principles are integrated with the basic accounting cycle, accounting control, working capital accounts, and long-term resources and depreciation.

4 semester hours

5024 - Accounting 2

Principles and concepts relating to partnerships and corporations form the initial part of this course. Manufacturing, cost accounting, budgeting, internal reports, fund statements, and statement analysis comprise the latter part of the course. PREREQUISITE: 5023.

3 semester hours

5025 - Accounting 15

Accounting 15 is a basic study in the recording, classifying, and summarizing of business transactions. In addition, computation of payroll and payroll taxes and development of a bank reconciliation is discussed.

3 semester hours

5026 - Cost Accounting

This course provides an overview of the nature and purpose of cost accounting. Cost data, including related budgets, standards, and reports are discussed as priceless tools of modern management. Considering first the basic concept that the flow of cost matches the flow of work, the student is carried by a continuity of presentation through job-order cost accounting, followed by process costing, budgeting, standard costing, nonmanufacturing cost, direct costing, and the application of data processing techniques to cost procedures.

3 semester hours

5027 - Data Processing Accounting Systems

The function of this course is to introduce the student to the principles of the design and development of accounting systems. The course provides valuable background material in the utilization processing device. The student is schooled in the latest techniques of billing, payroll, warehousing, production, and inventory control systems. The student is required to analyze, document, and implement computer oriented systems.

3 semester hours

5028 - Business Management

Record keeping, business law for beauty salons, advertising, shop furnishings, supplies control, bookkeeping, income tax records, telephone techniques, and merchandising comprise this course.

2 semester hours

5029 - Business Policies/Management

A basic course dealing with the fundamental principles and techniques underlying the managerial process in business management. Topics include marketing, finance, production, and personnel policies. Case studies and problems are part of the course.

3 semester hours

5031 - Our Legal Environment 11

Our present legal system and how it developed. Consideration is given to commercial, criminal, constitutional, and corporation law practices and procedures. Application of legal terminology, the systems of law, and the functions of the courts are reviewed. The basic law of contracts is emphasized as a basis of all business transactions.

3 semester hours

5032 - Our Legal Enviroment 12

Application of legal terminology, the systems of law, and the functions of the courts are reviewed. The basic law of contracts is emphasized as a basis for all business transactions.

3 semester hours

5034 - Executive-Technical Dictation and Transcription

This course is designed to develop the student's ability to construct fluent shorthand outlines for technical and executive materials and to acquire the ability to take dictation at high rates of speed and transcribe with speed and accuracy.

6 semester hours

5036 - Legal Dictation and Transcription

This course is designed for the student training for a career as a legal secretary. Practice material is provided to improve spelling, pronunciation, and mean of the language of law.

6 semester hours

5037 - Medical Terminology

This course is designed to give the student a keener understanding of the professional language used in the medical field through an extensive analysis of words and their interpretation by combining word roots synthetically with prefixes and suffixes.

3 semester hours

5038 - Secretarial Accounting 2

The expanded consideration of the accounting for purchases, sales (including installment sales and consignment sales), inventory, prepaid expenses, and tangible long-lived assets. The treatment of the owner's equity of a single proprietorship, partnership, and corporation and of the interim statements is provided as well as references to modern data processing procedures.

3 semester hours

5040 - Intermediate Accounting 1

A course designed to develop the power of analysis in utilizing accounting data. The emphasis is on theory and the application of theory in problem solving. Included is a review of the accounting cycle, followed by consideration of the balance sheet accounts, cash and temporary investments, receivables, inventories, current liabilities, investments, and plant and equipment. PREREQUISITE: 5024.

3 semester hours

5041 - Intermediate Accounting 2

Includes an in-depth study of the theory and analysis of the balance sheet accounts and the use and interpretation of financial data. Areas considered are intangibles, long-term liabilities, stockholder's equity, statements from incomplete records, errors and their correction, use of analysis of financial statements, funds flow, and price level changes. PREREQUISITE: 5040.

3 semester hours

5042 - Advanced Cost Accounting

A study of the more involved theories of the costing process such as budgetary control, distribution, differential, and direct costing. PREREQUISITE: 5026.

3 semester hours

5043 - Income Tax

A comprehensive study of the Federal and State tax structure and practice in applying tax principles to specific problems as they involve the preparation of returns. PREREQUISITE: 5024.

3 semester hours

5044 - Corporation Finance

The principles underlying the nature, operation, and control of the corporation are examined through an analysis of its organizational structure and financial practices and policies.

3 semester hours

5045 - Credits and Collections

Credit is examined historically and as an integral part of the business system today. The functions of credit, elements of determining credit worthiness, and credit instruments are studied. Also included are elements of retail credit and consumer credit as well as the function of the credit analyst and of the credit manager.

3 semester hours

5046 - Money and Banking

The functions and services of money and credit as media of exchange are discussed. A detailed study is made of the organization and functions of modern financial institutions such as commercial banks, trust companies, investment security houses, savings institutions, stock exchanges, the Federal Reserve System, and other credit and financial institutions.

3 semester hours

5047 - Financial Statement Analysis

Analysis of financial statements and trends to evaluate performance of management and direction of progress of the business; condition of the company as its balance sheet data and results of its operations in terms of return on capital invested and use of working capital; advantage of presentation of facts through statements of application funds, cash flow projections, and budgetary planning for current and future outlook. PREREQUISITE: 5024.

3 semester hours

5048 - Business Law 1

A study of the basic legal principles underlying modern business transactions with particular attention to contracts, agency and employment, checks, drafts and promissory notes, personal property, and bailments.

3 semester hours

5049 - Business Law 2

The study outlined in Business Law 1 is continued with emphasis upon the law of sales, security devices, insurance, partnerships, corporations, real property, trusts, decedents' estates, bankruptcy, governmental regulation of business and labor laws. PREREQUISITE: 5048.

3 semester hours

5050 - Principles of Management

The basic purpose of this course is to provide an understanding and appreciation of the part that scientific management plays in the

successful operation of the business institution within the framework of present economic circumstances. The functions of management are analyzed, and the principles which assist the manager in maintaining effective coordination and control are related to these functions. Case problems are utilized to develop an understanding of the relationship between principles and practice.

3 semester hours

5051 - Business Policies

The purpose of this course is to develop an appreciation of the relationship between decision making and the administrative or policy making process. An overall approach to company operation is taken, and the interdependence of activities is emphasized. Integrated cases are used to develop a systematic approach to decision making, to the formulation of policies, and to putting policies into practice. PREREQUISITE: 5050.

3 semester hours

5052 - Personnel Management

This course is designed to study the nature and function of personnel administration in its relation to the entire scope of the business enterprise. Supervisory skills are related to employee needs, and case problems are used to demonstrate the role of personnel administration, manpower and employee development, and employee evaluation. PREREQUISITE: 5050.

3 semester hours

5053 - Industrial Relations

This course is a basic introduction to the area of labor-management relations, including the rise of unionism and the nature of the union organization, local and national. The relation of the union to management, public regulation of industrial relations to include current legislation and prospective national labor problems, the nature and scope of the contract, and the techniques of collective bargaining and arbitration are analyzed. Emphasis is placed on the dynamics of expanding area of labor-management relations. PREREQUISITE: 5050.

3 semester hours

5054 - Production Management

The organization and operation of the physical means of production are emphasized. Included are capital equipment utilization, work measurement and methods analysis, cost, quality and production control, job evaluation and wage incentive systems. Consideration is given to the quantitative aspects of modern management and their value to the executive. PREREQUISITE: 5050.

3 semester hours

5055 - Logistics

The study of the movement and storage of goods in a manner optimizing time and place utility. Transportation modes, rate structures, inventory control and EOQ models, inventory information systems, and the role of the distributor in orderly movement of goods are considered. PREREQUISITE: 5059.

3 semester hours

5056 - Marketing Management

The application of marketing principles to the study and resolution of marketing problems related to distribution, pricing, advertising, product line planning and merchandising, and research, Students are exposed to quantitative aspects in the solution of problems utilizing models and computerized games. PREREQUISITE: 5059.

3 semester hours

5057 - Marketing Research

This course introduces the student to the specialized techniques of marketing research and its contribution to management decision making; evaluates quantitative and qualitative approaches to marketing research and their effective use; includes an introduction to packaged information, survey and sampling techniques, motivation research, forecasting, and market simulation; emphasizes the development of skills in analysis and interpretation as a basis for problem solving. PREREQUISITE: 5059.

3 semester hours

5058 - Retail Management

Recognizing the broad scope of retail management, this course combines introduction to the operation and problems attendant to retail outlets, including merchandising and control, buying and selling; influence of display and promotion; store systems and personnel management with exercises in cost controls and quantitative studies of retailing problems. PREREQUISITE: 5059.

3 semester hours

5059 - Marketing Procedures

Introduction to marketing principles, functions, and institutions as related to retail, industrial, and commodities markets. Emphasis is placed on the concept and roles of marketing; the identity of the consumer; functions of distribution; and specific characteristics of retailing, wholesaling, industrial, and commodities marketing.

3 semester hours

TECHNICAL

— 6000 SERIES —

6002 - Bio-Med Electronic Systems 391

A continuation of the first year electronics courses with emphasis on circuits commonly found in bio-medical equipment; specialized power supplies, D.C. amplifiers, differential amplifiers, chopper amps, and operational amplifiers.

3 semester hours

6004 - Bio-Med Techniques 391

Introduction to cell structure and physiology. Course designed to give a concise survey of human anatomy and physiology emphasizing structure and function of each system.

Structural anomalies and functional disorders are studied in their relation to bio-medical instrumentation.

4 semester hours

6005 - Bio-Med Techniques 392

Introduction to basic chemistry emphasizing redox, chemical equilibrium, and ionization. Includes some physiological chemistry and the integrating of concepts with related laboratory apparatus.

4 semester hours

6006 - Bio-Med Techniques 393

Application of knowledge gained in Bio-Med Techniques 6004 and 6005 to specific classes of instruments; e.g., centrifuges, spectro-

photometers, recording and data handling apparatus. Principles of operation, application, and service problems are discussed.

4 semester hours

6007 - Bio-Med Techniques 394

A continuation of Bio-Med Techniques 393 with emphasis on various types of physiological monitoring equipment.

3 semester hours

6008 - Introduction to Data Processing

This course includes an overview of Unit Record equipment and computers and a survey of card layout and form design as applied to Unit Record equipment and high speed printers. Program-oriented languages including Fortran, Cobol, Assembler language, and Report Program Generator will be discussed in detail. A study will be made of the various input-output devices used in conjunction with computer systems. Tape and Disk file organization will be discussed in detail.

3 semester hours

6009 - Fortran

Fortran (an acronym for FORmula TRANslation) is one of the most widely used compiler languages available for use on many modern day computers. This course is designed to teach the student how to write programs in the Fortran Language so that he may utilize the computer as a tool to solve statistical and mathematical formulae. Students will be given "hands on" experience on the computer so that they can compile and execute the many programs that they will be required to write and test.

3 semester hours

6010 - SPS-Symbolic Programming System

SPS (Symbolic Programming System) is a common "one for one" computer assembly language. This means that for each com-

puter statement the programmer writes, the computer assembler generates one machine language instruction. The student is trained to use the SPS language to write computer programs which are assembled and tested on one of the computers in the laboratory. PREREQUISITE: 6008.

3 semester hours

6011 - BAL-Basic Assembly Language

Basic Assembly Language as applied to the 360 Series of IBM Computers is the main content of this course. Upon completion, the student will be able to write, assemble, and "debug" programs written for this equipment. Extensive use of the IBM 360 Computer in the Data Processing Laboratory will aid the student in bridging the gap between the theoretical and the practical. PREREQUISITE: 6008.

3 semester hours

6012 - Cobol 1

COBOL (COmmon Business Oriented Language) was developed under the auspices of the Department of Defense with the cooperation of a number of computer manufacturing companies and major users of computers in the United States. COBOL is a compiler-type language designed to handle business problems. Students will use a medium scale computer to test and "debug" the many business programs that will be written as requirements of this course. PREREQUISITE: 6008.

3 semester hours

6013 - Cobol 2

Advanced COBOL coding techniques for tape and disk files are covered. Core-saving techniques and special features such as SORT verb and REPORT WRITER facility are included. Business-oriented applications will be discussed and programmed in detail. Upon completion of this course, the student will be qualified to design and program a typical business problem in COBOL. PREREQUISITE: 6012.

3 semester hours

6014 - Data Systems Development and Design

Advance development and design of data processing systems. The student learns to make effective use of automatic equipment and management techniques to meet the needs of business through the use of computers. The course is designed to give the student advance procedure development, systems conversion, documentation, controls, and management of a Data Processing Department. PREREQUISITE: 2 Programming Languages

3 semester hours

6015 - TOS DOS Tape and Disk Operating Systems

Upon completion the student will be able to describe a detailed logic flow of the operating systems and plan OS extensions to fit into this systems logic program and test user accounting, supervisor call, nonstandard labels, error and access method routines which use the EXCP level of accessing. He will be able to encode control cards implementing the functions of System Control and Systems Service and encode the Assembler Language Macro instructions necessary to utilize the Data Management and IOCS facilities of DOS and TOS. PREREQUISITE: 6011.

3 semester hours

6016 - Programming Project (Data Processing)

The student will develop special business systems including the necessary computer programs. Course flexibility is utilized to meet current demands of the computer industry and its changing techniques. PREREQUISITE: 2 Programming Languages.

2 semester hours

6017 - RPG-Report Program Generator

Report Program Generator (RPG) as applied to the 360 series of IBM Computers is the main content of this course. Upon completion, the student will be able to write, assemble, and "debug" programs written for this equipment. Programs for billing, payroll, inventory control, and accounts receivable will be written and tested

using the IBM 360 Computer in the Data Processing Laboratory. PREREQUISITE: 6008.

3 semester hours

6018 - Fundamentals of Electricity 311

A course dealing with the basic theories and concepts essential to a practical understanding of all phases of electricity and electronics. It treats fully the nature of electricity and magnetism, including an exposition of the electron theory as it relates to electricity. Consideration is given to Ohm's Law, and to associated circuits, batteries, induced E.M.F., magnetic circuits, D.C. measuring instruments, motors, and generators. The laboratory work is designed to verify experimentally the laws and theories of D.C. electricity as well as to provide an opportunity for repair of equipment.

4 semester hours

6019 - Fundamentals of Electronics 1

A course in electrical fundamentals similar to 6018 with emphasis given to topics most helpful in the further study of electronic technology.

5 semester hours

6020 - Fundamentals of Electricity 331

A course in electrical fundamentals similar to 6018 with special consideration for material underlying electrical applications in heating and ventilating technology.

4 semester hours

6023 - Fundamentals of Electronics 311

The principles and properties of vacuum tubes are given to the operation and uses of these devices in rectifiers, amplifiers, oscillators, and other circuits. The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles in actual circuits.

3 semester hours

6024 - Fundamentals of Electronics 2

Similar to 6023 with special attention to the requirements of electronic technology.

5 semester hours

6025 - A .C. Fundamentals

Understanding of the basic electrical and electronic principles of D.C. circuits is extended to include the more complex area of A.C. circuits. Generation, vector representation, and algebraic manipulation of the sine wave, inductance, capacitance, resonance, and Ohm's Law for alternating current circuits are studied. Practical methods of measuring inductance, capacitance, and impedance are discussed together with A.C. and D.C. bridge circuits. Included also are the rudiments of complex-wave formation and analysis. In the laboratory, the student will perform experiments confirming theory and will be given experience and training in the repair of A.C. equipment.

4 semester hours

6026 - Fundamentals of Instrumentation

The student is introduced to the types of measuring means and their function, theory of operation, practical construction, and use. Instrumentation terminology, and measuring devices for pressure, temperature, flow, level, and analysis are studied. Experiments are performed in the laboratory.

3 semester hours

6027 -Introduction to Computer Circuits

This course includes consideration of basic logical circuits, logical design, arithmetic and memory elements, and input and output devices. Computer operations and programming are also briefly treated and the use of Boolean Algebra is emphasized in logical ways.

3 semester hours

6028 - D. C. Industrial Applications

Electrical and magnetic circuits are studied as they apply to the construction, principles of operation, and performance characteristics of direct current apparatus. Laboratory and lecture are combined in the study of the shunt and compound motors. The course also includes the study of auxiliary apparatus needed to start, stop, and control D.C. motors and generators.

3 semester hours

6029 - Industrial Electronics

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The cuit of a complete electronic control system and the characteristics of the component parts of each circuit are studied. Emphasis is placed on the characteristics of phanatron, thyratron, ignitron, solid state devices, and sensing elements. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics.

3 semester hours

6030 - Industrial Electronics Tubes and Circuits

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The basic circuit of a complete electronic control system and the characteristics of the component parts of each circuit are studied. Emphasis is placed on the characteristics of the phanatron, thyratron, ignitron, solid state devices, and sensing elements. Parts of the course deal with vacuum-tube amplifiers, oscillators, and saturable reactors. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics. It is intended to develop an understanding of those circuit construction practices and testing techniques common to the field.

3 semester hours

6031 - Industrial Electromechanical Systems

Class and laboratory work in basic pneumatic, hydraulic, and mechanical systems which make use of previously acquired understanding of electrical and electronic techniques. The application to automated equipment and systems is stressed. PREREQUISITES: 6028, 6030, 6033.

3 semester hours

6032 - Electromechanical Circuit Design

The design and application to industrial electromechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage, and electronics.

3 semester hours

6033 - Semiconductors and Transistors 1

The principles and electrical properties of semiconductor diodes and transistors are studied. Special emphasis is placed upon the uses of semiconductor devices in rectifiers, amplifiers, oscillators, and special circuits.

The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles and uses in actual circuits.

3 semester hours

6034 - Semiconductors and Transistors 2

A study of the circuitry and design of semiconductor devices commonly used in industry. Among the topics covered are servo controls, switching networks, regular circuits, and special amplifiers. The nature and basic design of these circuits are analyzed using the latest components available.

3 semester hours

6035 - Semiconductor Circuits

A study is made of common-emitter amplifier, common-collector amplifier, common-base amplifier, large and small signal approximations, bias and stabilization, transistor parameters, gain relationships, temperature effects and frequency response. Most of the course stresses the ideal transistor approach; approximations that retain only the most significant features of transistor action. By focusing on key factors, the student quickly obtains a feeling for transistor circuits and how they work. Second-order effects, which are discarded in the ideal transistor approach, are given some attention because, at least in theory, they give exact answers.

3 semester hours

6036 - Electronic Instrumentation

This course focuses the student's attention on the measurement process, on basic electronic tests, and on the characteristics and capabilities of electronic instruments. It analyzes a number of basic electronic instruments to illustrate how they work, what they do, and what their limitations are. It includes general transient analysis and decibel conversions, use of Thevenin's theorem to determine the loading effects of ammeters and voltmeters, derivation of the frequency response of a peak detector, a-c bridges and their equations.

3 semester hours

6037 - Pulse Shaping Techniques

The fundamentals applying to nonsinusoidal pulse, timing, and switching circuits are presented. The theory is demonstrated by actual measurement and oscilloscope observation, and the circuits are analyzed mathematically in detail. Emphasis is placed upon Fourier and consecutive segment analysis; the ratio method of solving simple circuits; the application of circuit theorems; controlled distortion with differentiation and integration circuits; limiters, clampers, and clippers; multivibrators, blocking and shock-excited oscillators; basic sawtooth generators; gating and delay circuits.

3 semester hours

6038 - Ultra High Frequency Techniques

An introductory course in microwave theory and measurements which covers basic microwave theory and techniques and the applications of these techniques to measurement problems. A compact, logical description of physical concepts, mathematical formulations, measurement systems, and illustrative examples of ideas and measurement procedures is presented. Although this is basically a qualitative approach to the microwave technique, it includes the necessary mathematical details for an adequate treatment of the fundamental principles. X-band waveguide devices are described, but the measurements are applicable to the other waveguide frequencies by appropriate substitutions.

3 semester hours

6040 - Control Circuits and Applications 1

A course designed to give the student an understanding of the operation of various types and makes of control devices and how combinations of these devices can be applied and varied to secure desired conditions in heating and cooling systems. It includes interpretation and drawing of schematic control circuit diagrams.

4 semester hours

6041 - Control Circuits and Applications 2

A continuation of Control Circuits and Applications I.

4 semester hours

6042 - Heating System Design

The material covered includes heat transfer through various types of building materials; heat loss calculations for residential and commercial structures; insulating materials; moisture control; estimated fuel costs for various types of fuels; basic design principles for warm air, hot water, and steam heating systems; heat gains; solar

effects on walls, windows and roofs; the psychrometric chart; cleaning and humidification of the conditioned air supply; duct design; and fan, blower and pump selection.

3 semester hours

6043 - Advanced Heating System Design

This is a second semester course continuing the work of 6042 with more complex structures and systems.

3 semester hours

6044 - Hydronic Layouts and Construction

Instruction is given in the layout and construction of hydronic heating systems. Piping diagrams are drawn using standard procedures. Emphasis is placed on the construction and use of working drawings.

2 semester hours

6045 - Heating and Power Laboratory

Instruction is given in the application of principles learned in other courses to actual practice. Use of live units brings application in focus. Testing and service procedures are emphasized.

3 semester hours

6047 - Engineering Graphics 01

An introduction to engineering graphic techniques. Six laboratory hours per week.

No credit

6048 - Engineering Graphics 02

A continuation of Engineering Graphics 01. Six laboratory hours per week.

No credit

6052 - Engineering Analysis 1

An introduction to the application of the principles of engineering graphics to the solution of practical problems in engineering design.

3 semester hours

6053 - Engineering Analysis 2

A detailed study of manufacturing problems relating to cost, quantity, and equipment with emphasis on methods of problem or evaluation and criteria for choosing the best solution or combination of solutions in the problem area.

3 semester hours

6054 - Manufacturing Processes 1

This course is designed to provide a background of knowledge covering the various manufacturing materials and the fundamental types of manufacturing methods as employed in hot and cold working processes. The processes include foundry processes, hard mold castings processes, primary metal working processes, welding and allied processes, metal shearing and forming, plastics, and powder metallurgy. Through lecture, demonstration, and practical applications, the student is given the opportunity to become familiar with the various types of machine tools, tooling, measuring, and inspection procedures.

3 semester hours

6055 - Manufacturing Processes 2

A continuation of Manufacturing Processes 1. Additional manufacturing processes are covered with continued emphasis on the economics of methods. Laboratory includes instruction in such machine shop operations as milling, lathe, shaper, grinder, drill press, and bench work.

3 semester hours

6056 - Applied Mechanics

This course enables the student to become familiar with standard tables and formulas used to calculate size requirements or load limitations of structural units. Beams, columns, braces, trusses, frames, and similar components are considered.

3 semester hours

6057 - Kinematics

A course dealing with the motions of machine parts. The principles of motion, velocities, and acceleration are discussed. Motions are studied by the use of instant centers and the Coriolis Law. Board work involves study of velocity and acceleration using vectors. Velocity diagrams are illustrated by quick-return mechanisms, and attention is given to mechanisms such as ratchets, pantographs, and universal joints.

3 semester hours

6058 - Strength of Materials

A study of forces and force systems and their applications to materials. Stress and strain produced by the application of forces on beams, columns, trusses, and riveted and welded sections are studied for simple tension, compression, and shear. Laboratory experiments provide experience in measuring and calculating stresses produced for conditions of tension, compression, shear, bending, and torsion.

3 semester hours

6059 - Work Simplification

A broad approach to the use of motion and time study in industry. The uses of various types of charts and operational processes in general problem solving are developed. Typical problems requiring the application of operational analysis using therbligs are

undertaken. Consideration is also given to the work place, the work area, and to human engineering. The problem solving technique of evaluating all possible alternative solutions is stressed.

3 semester hours

6060 - Process Planning and Methods

A comprehensive study is made of the fundamental principles, practices, and techniques of process planning and methods. The responsibilities and range of activities normally associated with process planning are surveyed, also the relationship of process planning to other manufacturing functions.

The course is made meaningful by constant reference to concrete examples, interpretation of charts, operation analysis, and routing forms. Student participation is provided through selected case problems having single or multiple solutions. Additional classroom activities include the actual process planning of selected jobs in terms of description and the sequence of operations, tooling determination, setup time estimating, feed and speed calculations, and machine tool selection.

3 semester hours

6061 - Production Control

General consideration is given to various phases and elements of production control which are later applied to continuous process companies and typical job shops. Several problem cases serve as a basis for classroom discussion. In addition to a general introduction involving various types of manufacturing plants and their respective products, the course includes a study of the elements which contribute to a successful production control program. Production forecasting, product development, control of materials, routing, scheduling, dispatching, and follow-up are studied in sequence in terms of their significance and their relationship to production control.

The course is based upon the idea that there is no standard production control procedure applicable to all manufacturing companies, but that there is a correct production control procedure which can be developed for any company, large, or small.

3 semester hours

6062 - Printing Management and Quality Control

The development group method is employed here to give the student the opportunity to solve typical problems in plant management, such as employee relations and estimating. Small groups are also involved in studying methods of improving the quality of graphic material. Laboratory experiences involve the use of instruments for quality control.

3 semester hours

6063 - Plant Layout and Materials Handling

A basic study of the principles of effective plant layout including product and process analysis, layout planning, and layout patterns. The principles of materials handling are presented to show their contribution to an effective layout. Service and office facilities and the effects of plant location are discussed. Actual layout problems are presented for analysis by the student.

3 semester hours

6064 - Materials Science

An introduction to engineering materials and their properties. Emphasis is placed on the factors which determine material properties and the process by which these properties can be changed in a controlled manner. Materials covered include steel, cast iron, nonferrous metals and alloys, plastics, rubber, and some other nonmetallics.

3 semester hours

6065 - Tool Design I

This course is divided into two parts. The first part covers the principle of detailing parts for interchangeable manufacturing. The areas of limits, fits, tolerance analysis and surface finishes are covered, as well as the heat treatment of the components. The second part covers introduction to Tool Design, the design of gauges and cutting tools. Lectures and laboratory applications are combined to help the student gain knowledge and experience necessary to design tools that are used for mass production. PREREQUISITE: High School algebra, trigonometry, and drafting. The student makes use of manufacturers' catalogs. Throughout the course, the students meet for 2 one-hour lectures and 2 three-hour lab periods a week.

4 semester hours

6066 - Design of Machine Elements

A course in which machine design principles are studied and methods of calculating the required size and shape of various machine parts are developed. Selection of proper materials is given consideration. Stress and strain, design stresses, keys and fasteners, threaded numbers, welded and riveted connectors, and shafts are considered.

3 semester hours

6067 - Machine Design 1

The course involves the study of disk and cylindrical cones, gears, gear trains, pulleys, and couplings. Interference, contact ratio, strength and dynamic loading of gears are considered and simple reverted, compound, and epicyclic gear trains are worked out in detail.

4 semester hours

6068 - Machine Design 2

The student is given the opportunity to integrate knowledge

acquired during the machine design program by carrying out projects in which he designs complete machines or sub-assemblies. He is required to analyze the problem, gather pertinent information, carry out the necessary mathematical operations, make working drawings, and check his work. Throughout the course, he is encouraged to use his own judgment and initiative to the maximum extent possible.

4 semester hours

6069 - Engineering Graphics 1

An integrated course including freehand sketching, orthographic projection, theory of pictorial drawing, basic dimensioning, working drawings, and the analysis and synthesis of theoretical and practical problems involving the size, shape, and relative position of points, lines, planes, and vectors.

2 semester hours

6070 - Engineering Graphics 21

The theory and practice of information transmitted by means of the engineering blueprint.

2 semester hours

6071 - Engineering Graphics 311

Basic technical drafting as applied to electrical circuits, control circuits, and electrical layouts.

3 semester hours

6072 - Engineering Graphics 321

Engineering Graphics is a general course in the development and usage of "Electronic Engineering Nomograms." The nomograms used in the course are based upon equations commonly used by engineers and technicians. This course will cover simple often-used equations

and conversion charts and develop into filters, attenuators, transmission lines, and active circuits.

1 semester hour

6073 - Engineering Graphics 331

Basic technical drafting as applied to heating and ventilating layout and design.

2 semester hours

6074 - Engineering Graphics 332

A continuation of Engineering Graphics 331.

2 semester hours

6075 - Process Photography 1

A lecture and laboratory course presenting the latest technical information and techniques in halftone photography consisting of conventional half-tone, duo-tone, and various special and creative effects.

The course is further designed to impress upon the student cameraman the interrelationships of his own field and that of the stripper, platemaker, and press operating personnel.

3 semester hours

6076 - Process Photography 2

A continuation of Process Photography 1.

2 semester hours

6077 - Graphic Arts Processes 1

Fundamental survey of methods of putting ink on paper with the objective of acquainting the student with the field of printing

and publishing. Laboratory experiences are provided in the area of process camera operation on black and white and half-tone work with an introduction to the use of filters as applied to line color separation. Basic black and white stripping and imposition is also taught.

2 semester hours

6078 - Graphic Arts Processes 2

A study of proofing and platemaking including critical analysis of various types of plates. Instruction includes operation of presses and related equipment to varied job specifications. Introduction to silk screen work is also part of the laboratory exercise.

2 semester hours

6083 - Layout and Copy Preparation

Areas of balance, proportion, and proper paste-up procedures are covered. The student also gains an understanding of the tools and materials used in layout and paste-up.

3 semester hours

6085 - Nursery Practice and Propagation

Deals with procedures used in the propagation and growing of plant materials. Various nursery propagating areas are visited during the course. Subjects covered include collection and handling of seeds and cuttings, types of propagating units, good nursery layout, and field growing procedures.

Laboratory work includes taking and handling cuttings and observing growth habits of various plants.

3 semester hours

6086 - Planting Design

The objective of this course is to assemble the knowledge gained in previous design and plant identification courses and with this produce landscape planting plans.

The course is taught with the idea that often the student will be carrying out the plans of others. It will enable him to interpret accurately, or if necessary, make changes that will not destroy the original intent of the designer.

Grading is primarily based on performance in solving assigned drafting problems. Residential design will be stressed to the idea that basic principles apply to large areas.

3 semester hours

6087 - Landscape Design

Primarily a laboratory course dealing with the principles of good design. Subjects considered include space relationships, best use of space for various functions, shapes and forms, color, and analysis of needs in specific situations.

3 semester hours

6088 - Principles of Landscape Operations 1

An introduction to the field. Opportunities available in the field of landscape technology are discussed. Detailed studies are made of selected types of landscape work. Landscape equipment and landscape field and office procedures are covered.

2 semester hours

6089 - Landscape Operations (Planting)

Covers the principles involved in digging, moving, and planting landscape material. Field procedures and use of specialized equipment are emphasized. As part of the laboratory work, field trips are taken to various nurseries and job sites in the area to observe actual operations.

Subjects covered include digging, bare-root and balled plant material, lacing and rigging procedures, methods used in storing dug-plant material, and the steps necessary for proper planting of material including after care.

3 semester hours

6090 - Landscape Maintenance 1

Acquaints the student with the various maintenance operations commonly carried out in the fall and winter months. Field trips are taken to parks and commercial sites in the area to observe grounds care in different situations. Field problems involve campus maintenance.

Subjects covered include fall treatment of lawns and planted areas, mulching and winter protection, and other winter activities, such as snow removal. A portion of the course is devoted to the study of park management.

3 semester hours

6092 - Surveying

The theory and practice of construction surveying. Field practice is given in the use of tape, transit and level, and in data recording. Techniques of preparing working plans and maps from recorded data are developed making use of field notebooks.

4 semester hours

6093 - Surveying 721 (Landscape)

A course teaching the basic surveying operations used in landscape work. The use of simple instruments such as tapes and hand levels is covered first, followed by study of transits and construction levels. Mapping and contour studies are carried out, and the use of surveying in typical landscape operations is stressed.

3 semester hours

6094 - Construction Methods

A study of equipment, methods, and techniques used in construction of landscape pavements and structures. Considerable field work is involved.

4 semester hours

6095 - Soils and Fertilizers

Provides an understanding of the make-up of soils and how to improve them for most efficient plant growth. Laboratory work includes soil identification and analysis.

3 semester hours

6096 - Soils and Foundations

Analysis of subsoil conditions; bearing capacity and settlement analysis; character of natural soil deposits; earth pressure and retaining wall theory; stability of slopes and subgrades; foundation types and construction methods; and structural design of foundation elements.

3 semester hours

6097 - Roadway Design and Construction

Problems in roadway design and construction; roadway foundations; pavement surface properties; composition design of flexible pavement; structural design of concrete pavement; pavement subgrade and construction; and railroad track and bed.

4 semester hours

6099 - Gasoline Engines 1

Covers the design, theory of operation, and nomenclature of modern internal combustion automobile engines. Includes valves and valve operating mechanisms, pistons and connecting rod assemblies, crank shaft and bearings, lubrication and cooling systems. Laboratory assignments provide instruction and practice in servicing live engines.

3 semester hours

6100 - Gasoline Engines 2

Disassembly and assembly of modern gasoline engines. Includes actual wear measurements and wear factors, diagnosing engine trouble, and engine testing procedures.

3 semester hours

6101 - Drive Line 1

The function, construction, operation, servicing and trouble shooting of conventional clutch assemblies, standard transmissions, propellor shafts and joints, differentials, and suspensions presented through lecture, demonstration, and student participation in disassembly and reassembly of functional components.

3 semester hours

6102 - Drive Line 2

The function, construction, operation, servicing, and trouble shooting of automatic transmissions presented through lecture, demonstrations, and student participation in disassembly and reassembly of selected transmissions.

3 semester hours

6103 - Suspension and Brakes 1

An introductory course in automotive suspension and brakes covering nomenclature, theory of operation, and service procedures on suspension systems, brake systems, wheels and tires, steering gears, and related parts. Includes lectures, demonstrations, and laboratory practice.

3 semester hours

6104 - Suspension and Brakes 2

An advanced course in automotive suspension and brakes covering power brakes, power steering, wheel balance, tire truing, and wheel alignment. Students participate in disassembly, reassembly, and adjustment of components and systems.

3 semester hours

6105 - Electric and Fuel Systems 1

Covers the fundamentals of electricity and magnetism, construction, and the use of electrical meters, operating principles, construction and maintenance of batteries, charging systems, starting systems, ignition systems, instruments, and horn circuits. Also includes a study of basic carburetion principles, fuel-air ratio requirements, venture principles, and basic carburetor circuits.

3 semester hours

6106 - Electric and Fuel Systems 2

Covers modern A.C. and D.C. generators and control units, carburetor function, construction, operation and trouble shooting, gasoline engine tune-up, and trouble shooting using modern test procedures and equipment. Students participate in disassembly and reassembly of components and perform required bench tests.

3 semester hours

6110 - Mechanical Skills and Procedures

This course deals with the fundamental skills, necessary use, and care of hand and machine tools used in pipe fitting, welding, electric motor repair, and machine shop operations. Attention is given to correct practice and the scientific principles underlying such practice.

2 semester hours

6111 - Mechanical Skills and Procedures

This is a second semester course continuing the work begun in Laboratory Skills 1.

2 semester hours

6113 - Tool Design 2

This course is the continuation of course 6065, Tool Design 1. It covers the design of jigs, milling fixtures, grinding fixtures, lathe

fixtures, boring fixtures, miscellaneous fixtures, blanking dies and other dies. Laboratory problems involve the design and complete working drawings of the above. Industrial standards are used throughout. PREREQUISITE: 6065. Students meet for 2 one-hour lectures and 2 three-hour lab periods a week.

4 semester hours

6114 - Typography

Theory and practice emphasizing craftsmanship and appreciation of typographic principles. Laboratory work includes creative projects in typographic composition for effectiveness and esthetic value.

3 semester hours

6117 - Electronic Devices 391

Resistors, batteries, conductors, insulators, voltmeters, ohmmeters, ammeters, inductors, and capacitors. Introduction to test equipment, such as signal generators and oscilloscopes. Taught concurrently with 6120.

3 semester hours

6118 - Bio-Medical Measurements 391

Bio-medical transductors used for temperature, pressure, and flow measurements are discussed, along with related concepts in physics.

Effort is concentrated on such topics as sensitivity, resolution, recordability, readability, linearity and accuracy, with reference to the above transducers. A prerequisite knowledge of the algebra of linear equations, exponential functions, as well as elementary trigonometry is required.

3 semester hours

6119 - Electronic Circuits 391

A.C. theory, inductive circuits, capacitive circuits, transformers, resonance, filter circuits, and diode circuits. Taught concurrently with 6120.

3 semester hours

6120 - Electronic Amplifiers 391

Semiconductor theory, basic transistor theory, basic vacuum tube theory, applications of transistors, and tubes as amplifiers. Taught concurrently with 6119.

4 semester hours

6121 - Bio-Medical Measurements 392

This course is an extension of measurements (6118, 392) where the interest is shifted to acoustical, optical, and radiological devices.

3 semester hours

6122 - Trouble Shooting 391

Development of the logical procedures and skills necessary to trouble shoot electronic and electromechanical systems effectively.

3 semester hours

6123 - Bio-Med Electronic Systems 392

An extension of Bio-Med Electronic Systems 391 which will cover such topics as telemetry, including AM and FM modulation, transmission, and detection circuits. Also included is an introduction to logic and other simple control circuits.

3 semester hours

6124 - Bio-Med Equipment Design and Selection 391

Special projects involving the construction, evaluation, and selection of various components, materials, and instruments to fit into a bio-medical system which the student himself will design.

5 semester hours

6125 - Basic Electricity 391

Electron theory, Ohm's Law, series circuits, parallel circuits, series-parallel circuits, network theorems, magnetism, electromagnetic theory, and introduction to A.C. Taught concurrently with 6117.

4 semester hours

6139 - Landscape Machine Maintenance

Covers the care and maintenance of large and small powered equipment commonly used in landscape operations. The intent is not to have the student make actual repairs, but to learn how to maintain and to care for equipment in a manner that will minimize the necessity of repairs. Includes lubrication, tuning procedures, storage operations, trouble shooting, and simple repairs.

2 semester hours

6140 - Engineering Graphics 721

An introduction to the media and techniques used in the preparation of landscape plans. The course covers both freehand and mechanical drafting which prepares the student for future design courses.

2 semester hours

6144-6145 - Production Techniques 1,2

All process courses taught in the graphic arts technology program are based on progressively more difficult exercises which the

student performs in order to reach a predetermined achievement level. Production technique courses are designed to provide the student with actual live-job production responsibilities in the areas of layout and type composition, camera and stripping, platemaking, and presswork.

3 semester hours

6150 - Fluid Power

The basic theory of both hydraulics and pneumatics is developed in relation to either driving or controlling industrial machinery. Fluid power equipment is discussed from the standpoint of application. Skill is developed in the layout and understanding of fluid power circuits.

3 semester hours

6151 - Engineering Graphics 701

Basic forms of representations and foundations of drafting practices currently recognized by the automotive industry.

1 semester hour

6152 - Manufacturing Processes 01

An introduction to shop techniques.

No credit

6153 - Manufacturing Processes 02

A continuation of Manufacturing Processes 01.

No credit

6154 - Engineering Seminar 21

An introduction to basic procedures common to science and engineering with emphasis on basic computational methods, especially the slide rule and the digital computor. The course includes a survey of career possibility in certain fields of science and engineering, developed by means of outside lectures, field trips, and assigned reading.

4 semester hours

6155 - Power Plant Operation 1

A study is made of the fundamental principles of heat including these topics: theory of combustion, various forms of energy as applied to the general energy equation, vaporization of liquids and computation of their properties through the use of steam tables, pressure-volume and temperature entrophy planes, performance and details of boilers, boiler auxiliaries and accessories, process factors such as friction, corrosion, erosion, fatigue, contamination, overstress and unbalance effect, and boiler operation and maintenance.

2 semester hours

6156 - Power Plant Operation 2

A course designed to familiarize the student with operation, maintenance, economy, inspection, and efficiency of fire and water tube boilers. Attention is given to boiler construction, stresses in tubes, shells, and drums, natural draft vs. mechanical draft, safety valves, blow-off and non-return valves, pumping liquids by the use of simplex, power vacuum, gear and centrifugal pumps, feed water heaters, water conditioners, piping systems, steam traps, strainers and lubrication devices, sudden demands and overloads, and safety factors and code requirements.

2 semester hours

6157 - General Engineering Laboratory 1

The basic purpose of this course is to reinforce student understanding of material presented in the career-oriented lecture courses.

The areas of experimentation include materials, testing and evaluation, stress analysis, and work measurement. Techniques of data reduction and report preparation are included.

2 semester hours

6158 - General Engineering Laboratory 2

A continuation of 6157. Additional areas of experimentation include fluid power and process planning.

2 semester hours

6160 - Architectural Design and Specifications 1

An introduction to architectural and construction-graphic techniques and written specifications. Emphasis is on residential and light commercial and industrial structures. Two class hours and three laboratory hours per week.

3 semester hours

6161 - Architectural Design and Specifications 2

A continuation of 6160 with additional emphasis on mechanical and electrical drawings and specifications. Two class hours and three laboratory hours per week.

3 semester hours

6162 - Architectural Design and Specifications 3

A continuation of 6160 and 6161 with emphasis on mechanical and electrical drawings and specifications.

4 semester hours

6163 - Construction Estimating

An introduction to estimating and construction office practice to familiarize the student with the construction process as a whole,

the ways in which contractors organize their offices to accomplish a job of construction, the generation of plans and specifications and their use, systems of accounting, and how material quantity "take-off" forms the basis for accounting. Critical path method of planning and scheduling is studied intensively.

4 semester hours

6164 - General Construction Laboratory

Familiarity with construction crafts such as carpentry, masonry, and cement work is gained by direct experience in laboratory building projects. Three laboratory hours.

1 semester hour

6165 - Construction Methods and Equipment

An introductory study of methods to determine quantities of materials, equipment, labor, and money required for construction projects. It includes characteristics and capabilities of work equipment; methods of obtaining unit costs of in-place construction; and field reporting practices and responsibilities of field inspection.

4 semester hours

6166 - Radiologic Technology 1

Radiographic Exposures
Radiographic Positioning
Elementary Radiation Protection

4 semester hours

6167 - Radiologic Technology 2

Radiographic Positioning
Principles of Radiographic Exposures
Common Radiographic Procedures using Contrast Media
Nursing Procedures pertinent to Radiology and Pediatric Radiography

4 semester hours

6168 - Radiologic Technology 3

Radiographic Positioning
Principles of Radiographic Exposures
Protection of Patients and Personnel
Special Radiographic Procedures
Radiation Therapy

4 semester hours

6169 - Radiologic Technology 4

Radiologic Technology of Medical and Surgical Diseases
Radiologic Technologists in Departmental Administration
Technology of Supervoltage Therapy

6 semester hours

6170 - Radiologic Photography

A knowledge of the theory and technique of photography will provide the student with background in a subject that is closely allied to radiography. The copying of radiographs, charts, and text material, the making of lantern slides, the photography of equipment, and new or unusual radiographic positions will supply the radiology department with much useful teaching material as well as provide a stimulus for the preparation of articles for publication.

The effect of light upon photographic material and the exposing and processing of negatives and prints give the student an appreciation of the qualities of those materials which is of value not only for its own sake, but also to teach him to correctly evaluate radiographic quality.

2 semester hours

6173 - Construction Materials

An introduction to the materials used in the construction industry. Emphasis is placed on their physical properties, methods of production, and their construction applications. Materials covered include wood, steel, aluminum, alloys, glass, concrete, plastics, rubber, and others.

3 semester hours

6174 - Photography

Technical and aesthetic aspects of camera operation, exposure, negative development, printing, and enlarging. Emphasis is placed on sound craftsmanship, personal selection, arrangement, and discovery of forms necessary to sensitive photographic expression.

3 semester hours

6175 - Engineering Seminar 22

An introduction to the art of engineering. Techniques of solving engineering problems, developed by the student solving numerous actual engineering problems.

3 semester hours

6177 - Construction Management

A study of specialized business and management topics which are of particular interest to the construction industry. Topics include basic operational patterns, subcontracting procedures, purchasing and expediting, scheduling, change orders, accounting for material and supplies, field labor methods, critical path method, and legal matters.

3 semester hours

6178 - Electronics Lab 1

The laboratory work is designed to verify experimentally as much of the theory as possible that is studied in the fundamentals of electronics course which covers D.C. and A.C. fundamentals. During this course the student learns to use all necessary test instruments and laboratory equipment so that he may be able to perform the experiments properly.

1 semester hour

6179 - Electronics Lab 2

Continuation of Laboratory Course 1. Experiments in this course deal with vacuum tubes, gas tubes, and solid state devices. These electronic devices are used in the study of such circuits as: power supplies and filter networks; basic amplifiers including coupling methods, impedance matching, and negative feedback; oscillators.

1 semester hour

6180 - Electronics Lab 3

Continuation of Electronics Lab 2 with emphasis on semiconductor circuits, pulse shaping techniques, and electronic instrumentation techniques.

1 semester hour

6181 - Electronics Lab 4

Continuation of Electronics Lab 3 with emphasis on computer circuits, industrial electronics, and high frequency techniques.

1 semester hour

6182 - Process Graphics

A study of the basic principles of graphic representation and analysis and their application to environmental and process operations. It includes graphic problem solution, blueprint reading, and the preparation of flow sheets and piping layouts. PREREQUISITES: 1 year algebra and 1 year geometry.

2 semester hours

6183 - Environmental Pollution

An investigation of the sources of air and water pollution and their effects on man and his environment. It includes a study of air and water quality standards plus an overview of applicable control procedures. PREREQUISITE: 3087.

3 semester hours

6184 - Environmental Unit Processes

A study of the chemical and biological processes commonly used to control environmental pollution. It includes such topics as biological oxidation, photosynthesis, precipitation, coagulation, disinfection, and combustion. PREREQUISITES: 2005, 3087.

4 semester hours

6185 - Air Pollution Meterology

An investigation of the movement of air masses and their effect on the movement, diffusion, and concentration of air pollution. Visible emissions will also be discussed. The planning and interpretation of surveys and the evaluation of plumes will be considered. PREREQUISITE: 2005.

3 semester hours

6186 - Water Sampling and Analysis

A study of the techniques and equipment involved in obtaining samples of liquid pollutants and an analysis of materials by instrumental methods. It includes such topics as adsorption, extraction, colorimetry, spectrophotometry, chromatography and electrometric determinations. PREREQUISITES: 3087, 2005.

4 semester hours

6187 - Water Pollution Unit Operations

A study of the physical processes utilized in the treatment of water pollution. Topics such as fluid flow, filtration, sedimentation, flotation, adsorption, absorption, leaching, evaporation, and drying are investigated. PREREQUISITE: 2005.

3 semester hours

6188 - Water Pollution Instrumentation

A study of the operating principles and application of industrial instrumentation in relation to environmental water processes.

It will include devices for the measurement of such variables as pressure, temperature, level, flow, conductivity, turbidity and dissolved oxygen plus the automatic transmission and recording of data. PREREQUISITES: 6183, 2005. COREQUISITE: 6187.

3 semester hours

6189 - Water Pollution Laboratory

Selected laboratory studies associated with Water Pollution Unit Operations and Water Pollution Instrumentation. This course is open only to students who have taken or are enrolled in both 6187 and 6188.

1 semester hour

6190 - Systems Operation and Maintenance

An investigation of the operating characteristics of valves, pumps, filters, and similar equipment commonly encountered in treatment plants. Equipment maintenance and preventive maintenance programs will also be studied.

4 semester hours

6191 - Process Problems

An introduction to the analytical approach to problem solutions. It will include stoichiometry, analysis of typical process problems, and Fortran programming. PREREQUISITES: 2005, 3086.

4 semester hours

6192 - Treatment Plant Unit Operations

An investigation of the physical and chemical processes utilized in the treatment of liquid wastes. It includes such topics as solids digestion, processing and disposal; polishing by chlorination, irrigation, filtration and dilution; and the treatment of industrial wastes. PREREQUISITES: 3087, 2005.

3 semester hours

6193 - Treatment Plant Instrumentation

A study of the principles of operation of selected industrial instruments and their application to treatment plant processes. It covers such items as volume meters, flow meters, liquid level controllers, temperature controllers, pressure controllers, and timers. PREREQUISITE: 2005.

3 semester hours

6194 - Treatment Plant Laboratory

Selected laboratory studies associated with Treatment Plant Unit Operations and Treatment Plant Instrumentation. This course is open only to students who have taken or are enrolled in both 6192 and 6193.

1 semester hour

6195 - Fundamentals of Treatment Plant Operations

A general introduction to treatment plant facilities and their operation. It includes community waste disposal needs, public health implications of liquid waste disposal, disposal equipment, control methods, and maintenance problems.

3 semester hours

6196 - Industrial Electricity

An introduction to AC and DC principles and to their application in the operation and control of industrial equipment. The preparation and use of circuit diagrams will be investigated. PREREQUISITES: 2005, 3012.

3 semester hours

6197 - Air Pollution Control Processes

A study of the processes utilized to reduce or eliminate pollution of the atmosphere. Topics such as combustion, precipitation,

filtration, screening, catalysis, adsorption and absorption are investigated. PREREQUISITE: 2005.

3 semester hours

6198 - Air Pollution Instrumentation

An investigation of the instruments used to sense and record weather elements and pollutants, plus process control instrumentation. PREREQUISITES: 3094, 2005. COREQUISITE: 6197.

3 semester hours

6199 - Air Pollution Laboratory

Selected laboratory studies associated with Air Pollution Control Processes and Air Pollution Instrumentation. This course is open to students who have taken or are enrolled in both 6197 and 6198.

1 semester hour

6200 - Air Sampling and Analysis

An investigation of the equipment and techniques used in atmospheric sampling and of the instruments used to analyze the samples. Topics include the behavior of gases and suspended particles, sampling methods and equipment, electrical analysis, microscopy, spectroscopy, and chromatography. PREREQUISITES: 2005, 3094, 3087.

4 semester hours

6201 - Industrial Health and Safety

An investigation of the procedures and attitudes required so that men may safely work in the vicinity of industrial processes and equipment. Topics include the man-machine interaction, develop-

ment of mental attitudes, housekeeping, and the effect of the process atmosphere on health. PREREQUISITE: 3087.

3 semester hours

6202 - Data Processing Systems and Procedures

The purpose of this course is to teach the student how to develop systems and procedures and apply them to a Data Processing Installation. The student is schooled in the latest techniques of billing, payroll, warehousing, production, and inventory control systems. PREREQUISITE: 6008.

3 semester hours

6203 - Advertising Design

A course designed to further develop the student's ability to create layouts for advertisements. The student gains further knowledge in the arrangement of headlines, copy blocks, photographs, artwork, logotypes, borders, and other typographic devices that serve as a preview for the client and a guide for the illustrator, lettering artist, engraver, typesetter, and printer.

3 semester hours

6204 - Offset Stripping and Plate Making

This course is centered on the art of assembling photographic films into the exact arrangement that will appear on the printing plates maintaining at times, accuracy of three thousandths of an inch. The course includes detailed information and techniques utilized in both black and white color stripping. In addition to the stripping operations, the student in this course will become involved in the producing of various types of offset plates, and several methods of photo-composition, including preparation of various types of layouts and operations of photo-composing machines.

3 semester hours

6205 - Offset Presswork

This course includes the principles and procedures of registration, blanket and plate preparation and maintenance, operation of inking and dampening system, delivery operation and running the press. The materials also cover the common press troubles, including their recognition and solution, ink-water balance, squeeze pressures, and other technical press operations and adjustments.

3 semester hours

6206 - Advanced Typography

An advanced laboratory course in which the student experiments with tools, machines, both hot and cold typesetters, and related equipment to prepare type composition for the production of varied small jobs as well as book composition, magazine, and newspaper production.

The theory and practice emphasizing craftsmanship and appreciation of typographic principles are included here. Laboratory work also includes creative projects in typographic composition for effectiveness and esthetic value.

3 semester hours

Summer Session 1 (Affiliating Hospital)

6207 - Orientation and Professional Ethics

History of Radiology and Present Status
Radiology in the General Hospital and Patient Contacts
English and Metric Applications in Radiology
Theory of Filming and Fluoroscopy

2 semester hours

6208 - Fundamentals of Radiologic Technology

Observations and Demonstrations in Radiographic and Fluoroscopic Practices
Darkroom Indoctrination

4 semester hours

Summer Session 2 (Affiliating Hospital)

6209 - Principles of Radiologic Technology

Special Procedures
Medical use of Radio-Isotopes
Radiation Therapy (Basic)

2 semester hours

6210 - Application of Radiologic Technology

Film Critique
Special Procedures

4 semester hours

HEALTH

— 7000 SERIES —

7001 - Special Clinical Practice Summer 481

Summer session of supervised clinical practice assigned within the hospital environment to meet the examination requirements of the ARIT.

7002 - Foundations of Health Services

A review of local, state, and world health is presented as an interdisciplinary approach to health needs and institutions. The role and qualifications of several levels of health workers and their relationship with one another and the rest of society help to create an understanding of how society mobilizes its forces to overcome health problems. Health concepts are explored, preventive health measures are emphasized, and the disease process studied. Programmed units in medical terminology and interpersonal relations are utilized.

3 semester hours

7003 - Medical Lectures

This course presents the tissue changes resulting from trauma, disease, tumors, and degenerative processes. A series of lectures acquaint the student with the orthopedic neurological, and general medical conditions she will encounter in treating the patient.

3 semester hours

7004 - Sterilization/Sanitation

Basic knowledge of bacteriology, methods of sterilization, and sanitary regulations for beauty salons.

1 semester hour

7005 - Light Therapy

Training in application of mechanics such as: infra-red visible and invisible radiation, effects of ultra-violet rays, proper application of high frequency "violet ray," and care of electrical equipment.

1 semester hour

7006 - Dynamics of Human Motion

This course is designed to develop an understanding of the dynamics of human motion through the study of muscles and joints.

3 semester hours

7007 - Foundations of Operating Room Techniques 1

A combined lecture and laboratory course which develops competency in the performance of certain generally accepted routine procedures and techniques. Units in this course include: Related Nursing Procedures, Medical Terminology, Human Relations, and First Aid.

5 semester hours

7008 - Operating Room Techniques and Procedures 2

A general course presenting material in a sequence that will coincide with the practical experience of the technician in the operating room and delivery room.

4 semester hours

7009, 7010, 7011 - Inhalation Therapy Theory and Clinical Practice 1, 2, 3

A three-part presentation of medical lectures and supervised clinical practice.

18 semester hours

7012 - Inhalation Therapy Applications/Clinical Sciences

A four-part presentation of the applications of basic sciences related to Inhalation Therapy. This includes laboratory mathematics, physical sciences, anatomy, physiology, pathology of the cardio-vascular and respiratory systems, and pharmacology. A second part embodying the clinical applications of inhalation therapy as applied to medicine, obstetrics, pediatrics, general thoracic surgery, neuro-surgery, and emergency procedures are encountered in the hospital.

5 semester hours

7017 - Field Work and Studies 1

Introduction to Field Work and Studies. General introduction to community service agencies, historical development, organization patterns, role and function in community, client-agency patterns, recording and reporting, federal-state-local participation and support. Multi-service, coordinated concepts will be emphasized.

4 semester hours

7018 - Field Work and Studies 2

Continuation of lectures with field trips to community service organizations. PREREQUISITE: 7017.

4 semester hours

7019 - Seminar Field Work and Studies 3

A rotating supervised practicum in selected community service organizations is planned for students. Weekly seminars are scheduled with students functioning as group leaders. Case studies, group dynamics, and therapeutic activities are included. PREREQUISITE: 7017 and 7018.

6 semester hours

7020, 7021 - Supervised Practicum, Field Work and Studies 4 and 5

Continuation of 7019. Final review of all field activities and preparation for job placement.

15 semester hours

7022 - Seminar and Review

Final review of all field activities and preparation for job placement. PREREQUISITE: 7020 and 7021.

3 semester hours

7023 - Dental Assisting Techniques 1

This training combines lectures and student practice in the care and use of all types of dental instruments and materials. Laboratory techniques include preparation of models and related prosthetic procedures. Dental terminology, first aid, and dental ethics are emphasized throughout the course.

4 semester hours

7024 - Dental Assisting Techniques 2

Coordination of activities combine efficient chairside performance with general office procedures. Supervised clinical experience in selected training areas increases skill and confidence. Perfecting radiographic techniques is stressed in this semester.

6 semester hours

7025 - Dental Sciences 1

Dental Anatomy and Physiology provide a foundation for the study of all dental structures. Related sciences include Bacteriology and Sterilization, Pharmacology, and Dental Radiology. Knowledge of specialized areas of dental practice are expanded through lectures, field trips and visual aids.

4 semester hours

7026 - Dental Sciences 2

Theory and lectures include Dental Histology and Embryology, Oral Pathology, Oral Surgery, and Anesthesia. Continued study and preparation for service in specialized fields of dentistry are provided. Dental ethics and terminology are emphasized throughout the course.

2 semester hours

7027 - Medical Assisting Techniques 1

Presents theory and planned student activity in medical assisting techniques, skills, and behavior, including medical terminology, first aid, and medical ethics.

5 semester hours

7028 - Medical Assisting Techniques 2

A continuation of advanced theory and practice with introduction to selected laboratory procedures. PREREQUISITE: 7027.

4 semester hours

7029 - Medical Assisting Procedures 1

Includes theory and planned student activity in semitechnical medical techniques, skill, and behavior. Medical terminology and medical ethics are emphasized throughout the course.

3 semester hours

7030 - Medical Assisting Procedures 2

Continuation of classroom and laboratory work including performance of routine office laboratory tests. PREREQUISITE: 7029.

4 semester hours

7031 - Introduction to the Clinical Lab

Provides the pre-clinical student with an introduction to the routine procedures employed in the medical lab. Emphasis is placed on orientation to the clinical lab, proper use of lab equipment and reagents, and blood collecting procedures. Laboratory math, lectures and lab exercises in bacteriology, urinalysis, and EKG are presented. A short, supervised clinical experience in the performance of EKG's as well as field trips to hospital laboratories, is provided.

6 semester hours

7032 - Hematology and Serology

Lectures on the origin, development, and character of cellular constituents of human blood and their respective diseases are given. Laboratory emphasis will be on complete blood counts, indices, and sedimentation rates. Lectures and lab exercises in the antigenic components of serum are also included.

5 semester hours

7033 - Clinical Chemistry

Designed to familiarize the student with gravimetric, volumetric, and colorimetric analyses of components of blood serum, plasma, and other body fluids. Lectures and laboratory exercises include determinations of blood sugars, chlorides, protein, bilirubin, enzymes, and other bio-chemical analyses.

6 semester hours

7034 - Blood Bank and Coagulation

Lectures and laboratory exercises in typing, crossmatching, and detecting immune antibodies are presented. A detailed study and application of the mechanisms of blood coagulation are also included.

6 semester hours

7035, 7036 - Clinical Lab Practicum

Supervised clinical experience is assigned in an affiliated hospital laboratory under the supervision of a medical technologist (ASCP) or pathologist. The rotation schedule provides experience in the following departments: Blood Bank, Chemistry, Hematology, Microbiology, Serology, and Urinalysis. (Includes summer session)

12 semester hours

7037 - Physical Therapy Assisting Techniques 1

This course provides a survey of Physical Therapy and its relation to the medical environment. Emphasis is placed on the relationship of the assistant to the registered professional Physical Therapist. Equipment, modes of treatment, and elementary skills will be introduced. Field trips for orientation and observation will be planned.

3 semester hours

7038 - Physical Therapy Assisting Techniques 2

The student studies mechanical and physiological concepts of exercise programs with emphasis on the problems related to the patient's motor involvement. Laboratory experience is provided to develop the skill of the student in application of various assistive devices.

3 semester hours

7039 - Physical Therapy Assisting Techniques 3

This course provides lecture and laboratory work in the study and application of hydrotherapy, electrotherapy, radiation, and their physiological effects. Principles of massage techniques are included.

3 semester hours

7040, 7041 - Supervised Clinical Experience 441, 442

Supervised practice in selected clinical settings.

12 semester hours

7042 - Physical Therapy Assistant Seminar

Designed to correlate classroom work with clinical experience.

1 semester hour

7043, 7044 - Scalp Treatments and Hair Conditioning 1,2

Skillful training in treating scalp and hair conditions including manipulations of the scalp, neck, shoulders, use of electrical appliances, and the application of cosmetics.

2 semester hours

7045, 7046 - Manicuring 1, 2

Theory and practice in procedures of palin and oil manicure, nail repair, nail building, hand and arm massage.

2 semester hours

7047 - Facials/Make-up

Techniques studied are facial massage, contour make-up, choice of cosmetics to facial type, and the technique of applying make-up.

1 semester hour

7048 - Rudiments of Cosmetic Dermatology

Basic knowledge in the classes of diseases, allergies, terminology, primary and secondary lesions, diseases of hair, glands, and abnormalities of nails. The need for professional cooperation is stressed.

2 semester hours

7049 - Curl Control Techniques

Includes standard hair relaxing processes both physical and chemical, importance of test curls, care of permanently relaxed hair, and special problems in hair straightening.

4 semester hours

7050 - Cold Waving

Theory and practical skills in correct methods of permanent waving hair. Training includes sectioning of hair, winding, processing, and neutralizing techniques.

4 semester hours

7051 - Basic Styling Techniques

Training is provided in plain finger waving, and in the proper use of sculpture, cascade and spiral curls, locks and rollers.

2 semester hours

7052 - Hair Shaping

Skill is developed in correct use of scissors and razor for hair shaping. Practice is provided in trimming of necklines, tapering, and thinning hair.

1 semester hour

7053 - Hair Coloring

Fundamental course in hair tinting including application of tints. Various methods used are retouch application, pre-disposition testing, tint-back, bleaching, and corrective work on problem hair.

3 semester hours

7054 - High Fashion Toning

Advanced training in hair decolorizing and toning. Practical training includes streaking, frosting, highlighting, and marbelizing.

4 semester hours

7055 - Artistic Hair Styling

A study is made in the art and development of individual hair style creation and design.

1 semester hour

7056 - Shampoo and Rinses

Theory and practice develop manipulative skill for shampooing and rinsing. The various kinds of shampoos taught are plain, hot oil, creme, egg, liquid dry, and powder dry. The rinses include acid, creme, bluing, and color.

1 semester hour

7057 - Style Shaping

Advanced hair shaping techniques applied to specific hair styles and facial types.

1 semester hour

7058 - Therapeutic Facials/Contour Make-up

Practical training in the procedures and treatment of primary skin conditions. The various methods include acne, pack, hot-oil masque facials, avoidance of medical conditions, cooperation with physicians, ethics in facial treatment, lectures of special interest, correction of cosmetic defects, photographic make-up, methods of removing hair, depilation by chemicals, tweezing, and with waxes.

1 semester hour

7059 - Poise and Charm

The importance of good grooming, voice, posture, nutrition, public speaking, and wardrobe planning is stressed.

1 semester hour

7060 - Wig Styling

Types and selection of hair pieces are studied in relation to individual application. Care and basic techniques in hair shaping and styling are emphasized.

1 semester hour

7061 - Anatomy and Physiology 401

A study of the bones, muscles, and nerves of the cranium, neck, face, shoulder, hand, wrist, and arm, vascular system, blood circulation, analysis of structure and types of hair, nails, and skin.

3 semester hours

7062 - Special Clinical Practice Summer 431

A continuation of 7035, 7036. Assigned during the summer session to meet the examination requirements for certification.

7063, 7064 - Supervised Clinical Experience 471, 472

Opportunity for the student to observe and to assist the surgeon and other members of the surgical team in the operating room and delivery room under the direct supervision of Registered Professional Nurses.

10 semester hours

7065 - Supervised Clinical Experience 411

Supervised clinical experience in dental offices and Westover Air Force Base Dental Clinic provides students with additional opportunity to participate in a wider variety of dental office techniques and procedures.

3 semester hours

7066 - Supervised Clinical Experience 421

Supervised clinical experience in assigned cooperating health-care agencies provides students with additional experience in clinics, wards, emergency rooms, and admitting and medical records offices.

3 semester hours

7072 - Fundamentals of Nursing

An introduction to contemporary nursing. Scientific principles lay the foundation for the acquisition of requisite basic knowledge, skills, and appreciations inherent in the person of the nurse who attempts to meet the needs of man in health and illness. The community-centered approach emphasizes the legal, professional, and personal responsibilities of the nurse. The problem-solving approach is the basic pedogogy combining scientific principles with skill development. Planned educative events within the laboratory setting of related health agencies are correlated with lecture periods. Instructional modules with appropriate polysensory multimedia are utilized.

6 semester hours

7073 - Paternal and Child Nursing

The normal life cycle approach is used to develop knowledge and understanding of the maternity and pediatric patient. The physiological, physical, and psycho-social needs of the individual person are considered as dependent on each other and indivisible from each other. Laboratory experience includes observation and participation in the hospital and out-patient department environment including physicians' offices and community agencies. The use of polysensory multimedia is integrated throughout the course. PREREQUISITE: 7072.

7 semester hours

7074 - Mental and Physical Illness 1

Development of understandings, concepts, and skills necessary to provide safe nursing care to the adult and his family when illnesses

are encountered which necessitate short and/or long-term adjustments in patterns of living. A continuation of the behavioral learning outcomes of Fundamentals of Nursing and Paternal and Child Nursing. Laboratory experience is integrated to provide the student with the opportunity to achieve the objectives of the course utilizing community resources. Major health problems in the United States serve as a guide for syllabus development. PREREQUISITE: 7073.

9 semester hours

7075, 7076 - Mental and Physical Illness 2,3

A continuation of Mental and Physical Illness 1, highlighting the principles of nursing care of persons with psycho-social problems in the hospital, other settings, and the adult who is critically ill. Emphasis in the laboratory will be on the development of therapeutic relations with selected patients and the nurse's role with patients in various treatment situations. PREREQUISITE: 7074.

10 semester hours

7077 - Nursing Seminar

A seminar approach to the analysis of the role of the nurse as a professional and as a person through the case study approach of complex nursing situations requiring skilled nursing diagnosis and problems of nursing and nursing education in our contemporary society. PREREQUISITE: 7076.

2 semester hours

7078 - Fundamentals of Inhalation Therapy

An historical approach to the study of the use of medical gases, ventilators, and thoracic therapeutic procedures. Orientation to the clinical facilities and to the role of the Inhalation Therapist as a contributing member of the Health Team is provided. Major health problems, including pollution of the environment, as it affects the respiratory tract will also be covered.

3 semester hours

7079 - Professional Relations and Administration

The student must be familiar with State Dental Practice Acts and related civil law, and have a thorough knowledge of dental and personal ethics. She should be familiar with codes of ethics of the American Dental Assistants' Association. Dental office ethics and inter-office relationships are also combined in the study of human relations. Also included are Public Health Dentistry, dental care plans, and dental hygiene concepts.

2 semester hours

7080 - Medical Assisting Seminar and Practicum

General introduction to hospitals and health core agencies provides students with additional experience in applying cognitive learning to practical application.

6 semester hours

7101 - Introduction to Early Childhood Education

The principles and philosophical development of early childhood education including purpose, history, development, and current educational practices.

3 semester hours

7102 - Child Growth and Development 1

Development, organization, application, and evaluation of creachildhood. Basic concepts of physical, social, emotional, and mental development. The influence of cultural environment and individual differences is a prime consideration.

3 semester hours

7103 - Child Growth and Development 2

Designed to further the student's understanding of the developmental characteristics of the school age child through the primary grades. Behavioral patterns including feelings, attitudes, and values are discussed.

3 semester hours

7104 - Introduction to Creative Experiences

Exploration of objectives, methods, and materials for creative experiences in art, music, dramatics, language, and literature with prime consideration for the developmental needs of pre-school, kindergarten, and primary children.

3 semester hours

7105 - Creative Experiences Workshop

Development, organization, application and evaluation of creative experiences in art, music, dramatics, language, and literature within a curriculum for pre-school, kindergarten, and primary children. Emphasis will be placed on participation by class members.

4 semester hours

7106 - Principles and Practices of Early Childhood Learning

Rationale underlying current programs for young children. How to organize and develop learning experiences in communication, how to increase social understandings, and how to broaden concepts of the world in which the child lives. Curriculum areas are examined on the basis of learning experiences appropriate for the different age levels.

3 semester hours

7107 - Observation and Recording of Child Behavior

Course designed to increase objectivity and proficiency in observing and interpreting children's behavior; in addition, to increase awareness of normative and deviant patterns of behavior. Lecture and observation facilities are provided for study of young children.

3 semester hours

7108 - Dynamics of Childhood Behavior

An introductory course which is designed to foster in the student a deeper understanding of the behavior of children. Inquiry will

be made into some of the major biological, sociological, and psychological determinants which influence childhood behavior. The primary learning approach will be through individual case evaluations.

3 semester hours

7109 - Supervised Student Practicum

Supervised field experience in selected areas planned in cooperation with community agencies.

3 semester hours

7110 - Seminar and Critique

A systematic evaluation of the total program as it relates to the individual student. Research and discussion of child development, methods, materials, and content in early childhood education programs including the roles, responsibilities, and duties of professional and semiprofessional personnel. Lecture is devoted to experiences encountered in student practicum.

3 semester hours

ART AND MUSIC

— 8000 SERIES —

8080 - Music Appreciation 1

The aim of this course will be to increase the student's understanding of the art of music and to strengthen his ability to benefit, as a listener, from music. The course will introduce the various periods and styles of music through composers and their works. There will be a study of related subjects such as the materials and instruments of music, form in music, and the sociological and political influences upon music. One large scale symphonic or operatic work will be studied in detail.

3 semester hours

8081 - Music Appreciation 2

A continuation of Music Appreciation 1. PREREQUISITE: 8080.

3 semester hours

8082 - A Survey of Nonliterary Arts 1

This course is intended to acquaint the student with man's most important achievements in architecture, sculpture, painting, and music through a nontechnical consideration of the principles of the design and structure underlying art expression. A survey of representative works from the important regions and historic periods contributing to modern Western culture will be included.

3 semester hours

8083 - A Survey of Nonliterary Arts 2

A continuation of Survey of Nonliterary Arts 1. PREREQUISITE: 8082.

3 semester hours

8084 - Basic Music Theory and Chorus 1

3 semester hours

8085 - Basic Music Theory and Chorus 2

3 semester hours

8086 - Band

3 semester hours

8087, 8088, 8089, 8090 - STCC Chorale

A variety of chorale experiences will be provided with emphasis on the fundamentals of proper voice production and choral ensemble singing. Concerts both on and away from the campus will be performed.

1 semester hour

PHYSICAL EDUCATION

— 9000 SERIES —

9080 - Physical Education-Men-Freshmen

Designed to improve physical fitness and to help the individual student to develop fundamental skills, knowledge, and appreciation of physical education activities. Individual and team activities are included in the course.

½ semester hour

9081 - Physical Education-Men-Sophomore

Continued emphasis is placed on physical fitness and the development of fundamental skills. Aquatics and other activities of recreational nature are stressed to develop interest for carry-over activities.

½ semester hour

9082 - Physical Education-Women-Freshmen

Designed to provide recreational activity to improve individual skills, to develop body grace and efficiency, and to increase helath and vigor.

½ semester hour

9083 - Physical Education-Women-Sophomore

Continued emphasis is placed on physical fitness through participation in team sports, individual and dual sports, swimming, and recreational skills in order that the student may develop interest and skills which may be enjoyed in leisure time.

½ semester hour

"To the rest of the world, technology is the key which will finally liberate humanity from the bondage of want and poverty."

– Harvey Brooks, Dean of Engineering and Applied Physics, Harvard University


STOP

The College is a nonsectarian, fully integrated institution of higher learning in compliance with the Civil Rights act of 1964 and welcomes all persons regardless of race, color, or national origin.